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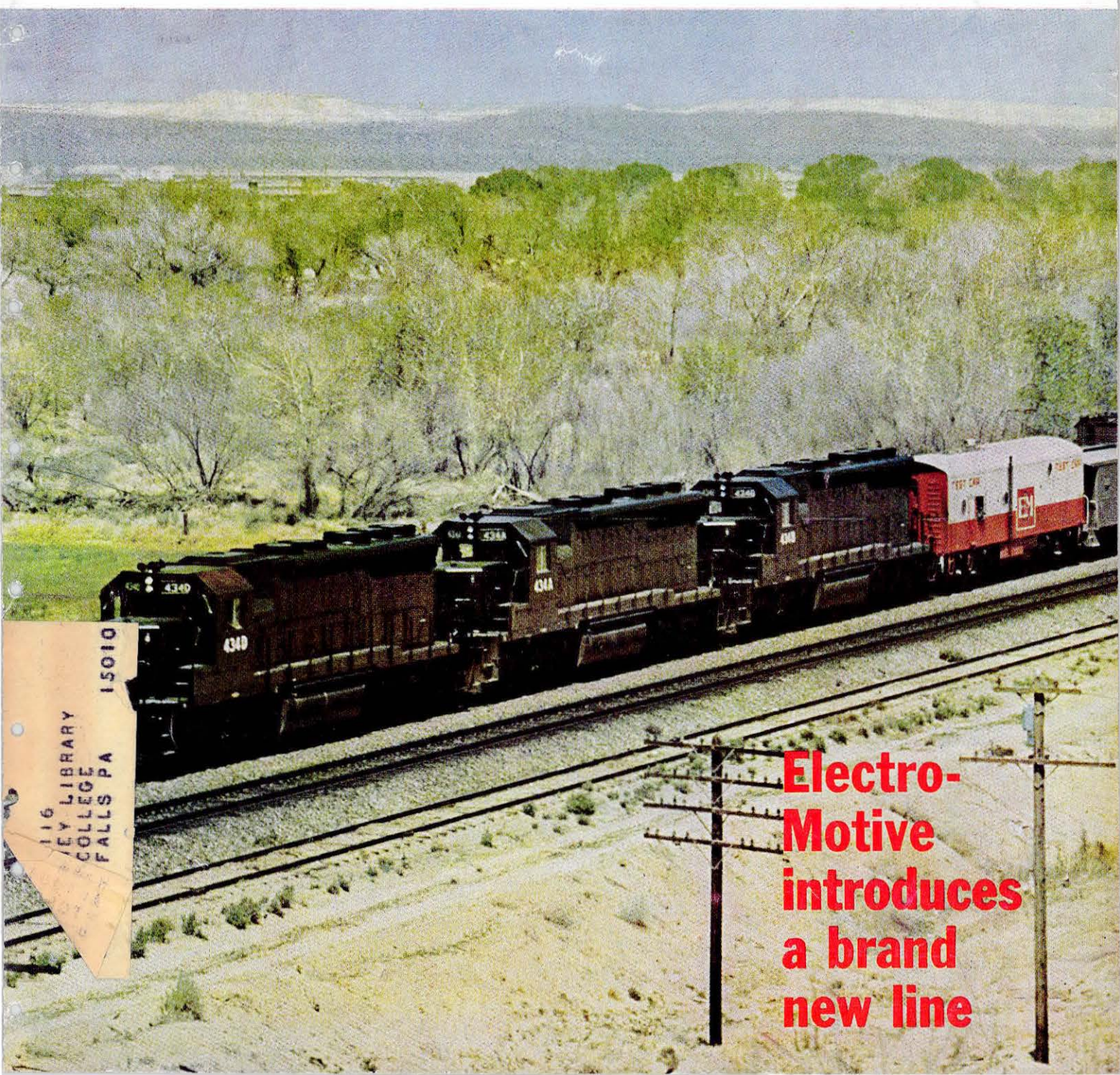
LaGrange's 'inside' story:
More power in all models

June 7, 1965

RAILWAY AGE WEEKLY



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HUMBLE OIL & REFINING COMPANY ... AMERICA'S LEADING ENERGY COMPANY ... FIRST IN RESOURCES/FIRST IN CAPABILITY

Esso

New automobiles travel on tri-levels up the Inside Passage to Alaska

Bethlehem-built 89-footers get land/sea duty for Alaska Rail Car Company

Bethlehem recently built ten of these 89-ft flat cars for the Alaska Rail Car Company, a subsidiary of Puget Sound Tug and Barge Company. Equipped with tri-level racks, the cars are loaded with new automobiles and barged up the Inside Passage to railheads in our 49th State.

Bethlehem pioneered the king-size flat car over ten years ago, and has since built thousands for use in transporting automobiles and highway trailers. Down through the years, engineering refinements have resulted in cars that are lighter, better equipped, and more reliable in this rapidly-growing service.

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Steel for Strength

BETHLEHEM STEEL

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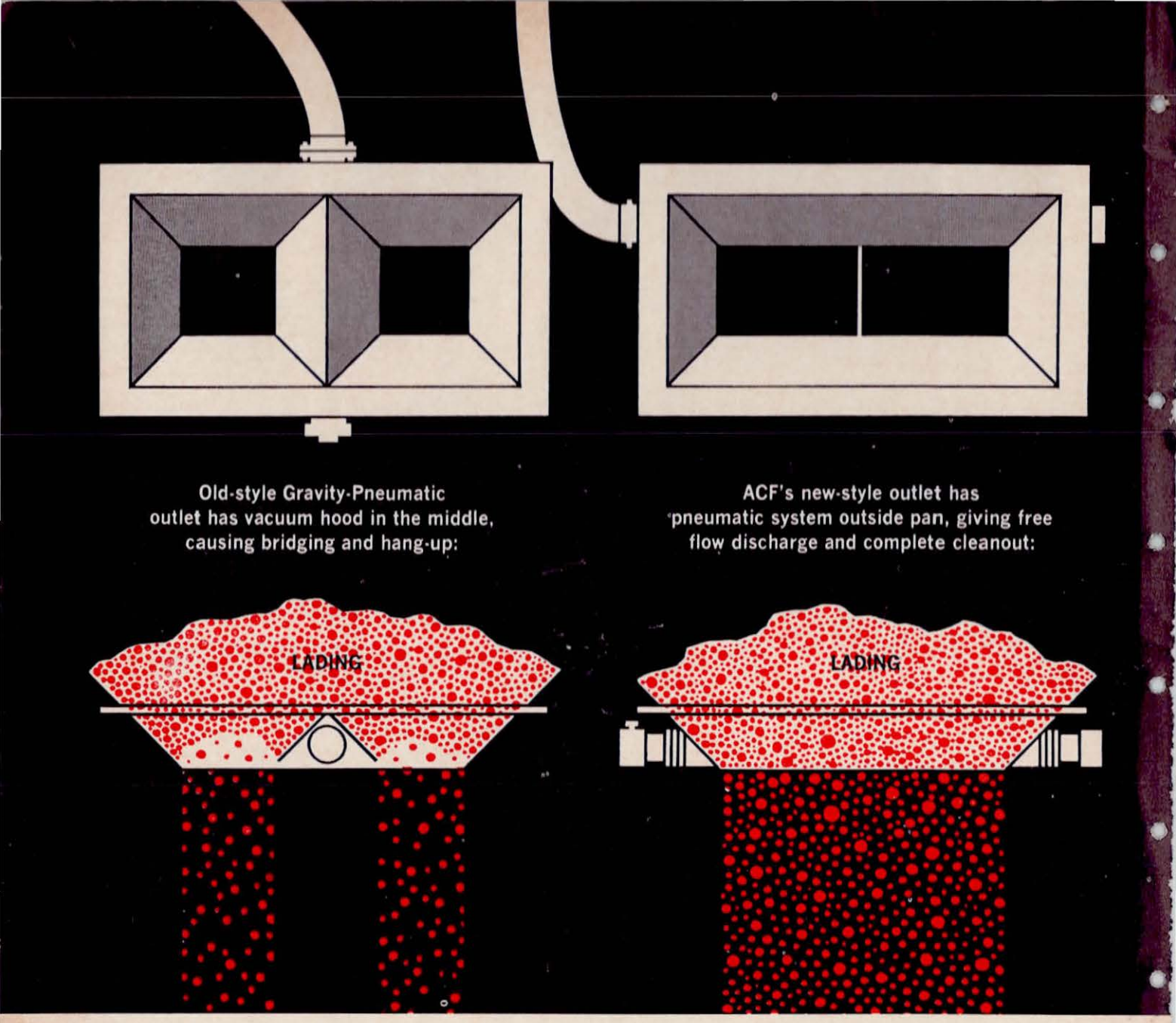
Old-style Gravity-Pneumatic outlet has vacuum hood in the middle, causing bridging and hang-up:
ACF's new-style outlet has pneumatic system outside pan, giving free flow discharge and complete cleanout:
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LADING

ACF Gravity-Pneumatic outlet eliminates bridging, gives 5 times more efficient gravity discharge!

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Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Published weekly (except for four issues combining two-in-one) by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn.

Railroad employees' subscription rate: U. S. possessions, Canada and Mexico, $6 one year, $8 two years, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year. In other countries, $15 a year. Single copies 60¢ except special issues. Address all subscriptions, changes of address and correspondence concerning them to: Subscription Dept., Railway Age, Emmett St., Bristol, Conn. 06011. Change of address should reach us three weeks in advance of next issue date. Send old address with new, enclosing, if possible, your address label. Post Office will not forward copies unless you provide extra postage.

Circulation Dept.; Robert H. Lash, Director of Circulation, John Rogers, Circulation Manager, 30 Church St., New York, N. Y. 10007. POSTMASTER—SEND FORM 3579 TO EMMETT ST., BRISTOL, CONN. 06011.

Printed at the Wilson H. Lee Co., Orange, Conn. 06477. Second-class postage paid at Orange, Conn. and at additional mailing offices.

RAILWAY AGE WEEK AT A GLANCE

June 7, 1965 • Vol. 158, No. 23

EMD's inside story: More power in all models

Electro-Motive last week announced an entire new line of nine higher-horsepower diesel units p.18

New equipment: Should you buy or lease?

The answer, for some railroads, is investment credit leasing. Here's how it works p.10

P&N's new line to greater profits

The tiny road has spent more than $3 million on a 24-mile-long branch in a search for more income p.14

Telling the RR story—via ads

Expenditures for railroad advertising last year were up all across the board p.16

Transit bill: $1.2 billion in 1970

States and communities will spend about $1.2 billion for equipment and construction in that year p.30

The Action Page—Where to in horsepower?

Modern, high-horsepower diesel units lead to some speculation about replacement ratios p.38

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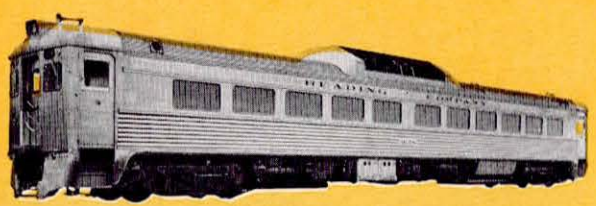
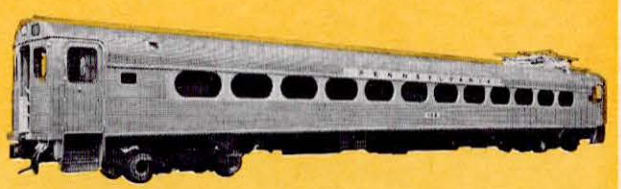
Budd

First with ideas

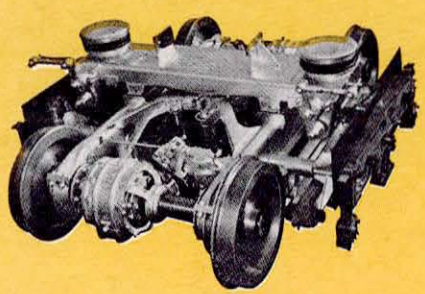
that mean new savings . . . New revenues



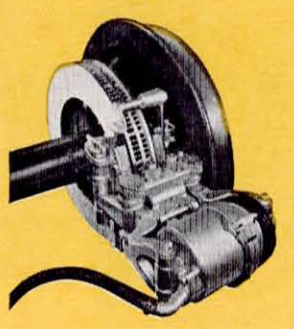
Budd RDC—Rail Diesel Cars provide high power/weight ratio, fast pickup . . . can be used singly or in multiple-car trains.



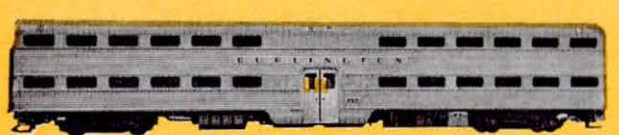
Lightest weight MU car. Budd MU Cars save maintenance and power costs.



Revolutionary lightweight Pioneer III truck design gives improved ride, lower maintenance and operating costs.



First off-tread railway car brake, the Budd Disc Brake provides longer shoe and wheel life, smoother, faster stops.



Gallery suburban coaches with high seat capacity bring new economies to commuter service.

Budd-built stainless steel "Brightliner" subway cars. 600 "Brightliners" are being supplied for the New York City Authority.

As a pioneer in the transportation field, Budd has been anticipating the transportation needs of the nation for more than 50 years. During that time, the Company has developed the engineering know-how, the experienced technical staff, the skilled craftsmen and advanced production techniques and facilities to produce the finest stainless steel railway passenger equipment in the world.

RAILWAY Budd DIVISION

THE BUDD COMPANY, PHILADELPHIA, PA. 19115

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SHORT AND SIGNIFICANT

REA stock sale to Greyhound is on again

The ICC has lifted the suspension of its order authorizing REA Express to sell 500,000 shares of its stock to the Greyhound Corporation. The lifting order also denied petitions seeking to have the Commission reconsider its favorable action. These petitioners included five western railroads (RA, April 26, p. 9).

●

Union Pacific gets an April shower of profits

April net income for Union Pacific was the highest for any April in the road's history. UP reported a profit of $7,079,932 on the ICC basis, and $5,879,932 after adjustment for deferred federal income taxes. This measured up as a $449,296 increase over April 1964 on both the ICC and adjusted bases. UP says its higher April earnings this year were due to greater shipments of wheat, corn and steel products which helped boost revenues more than $1.3 million over a year ago.

●

Date pushed back for exchanging RI stock

Rock Island stockholders now have until July 1 to accept Union Pacific's stock exchange offer. UP President and Chief Executive Officer Edd H. Bailey said that as of June 1, the holders of 2.4 million shares, or 85.5% of RI stock outstanding, had accepted the UP exchange offer. UP began issuing negotiable certificates of deposit on June 1 to RI stockholders who accepted the UP arrangement.

●

Governor signs repeal of Oregon crew law

Railroads have won the fight for repeal of Oregon's crew law—but it will be some time before they'll get the benefits of repeal. The bill signed by Gov. Mark Hatfield provides that the effective date of repeal will be Jan. 1—of 1967. Oregon's action leaves crew-law repeal hanging fire in a half-dozen states, either in legislature or in the courts. On the pending list: New York, Ohio, Indiana, Arkansas, Wisconsin, Washington.

●

Pennsylvania's Saunders to be honored

The National Conference of Christians and Jews has picked Pennsylvania Chairman Stuart T. Saunders to receive its national brotherhood award this year. The award will be presented at a dinner June 16 in New York at which Henry H. Fowler, Secretary of the Treasury, will be principal speaker. The National Conference is a civic organization whose aim, through mediation and education, is to promote understanding and lessen tensions based on race, economic interest, political belief and religious differences.

●

Maine to Florida power network being planned

A billion-dollar transmission system to supply power to consumer-owned electric utilities from New England to Florida is in the planning stage. A group, known as Yankee-Dixie Power Association, envisions three mine-mouth steam generating plants in Pennsylvania, Kentucky and Alabama, linked by 670 miles of double circuit, 500,000-volt extra-high voltage transmission lines. Another 2,425 miles of 500,000 and lower voltage line would fan out throughout the Eastern seaboard. The 18-state area includes 400 municipally owned electric utilities and more than 200 rural electric cooperatives. Investor-owned electric companies have been invited to join in detailed studies now under way. Financing, say its backers, would be through private revenue bonds underwritten by power sales contracts.

MONDAY MORNING REPORT

Munich: Center of the transport world in '65

It's exaggerating only slightly, if at all, to say that, from June 25 to October 3, the center of the transport world will be at Munich, Germany. Between those dates, that fascinating and historic city will be host to an International Exposition of Transport and Communications (IVA), which is billed as the first such event ever to cover all modes of transport on a world-wide basis.

A five-year, $15 million transport production

Preliminary reports indicate that IVA is going to be a truly massive show—and one that will be well worthwhile from every technical standpoint. It has been five years in preparation. Construction of facilities for it has cost some $15 million. It covers 600,000 square yards, and boasts 46 countries as exhibitors in 38 pavilions and 36,000 square yards of open space.

Equipment builders put their best on display

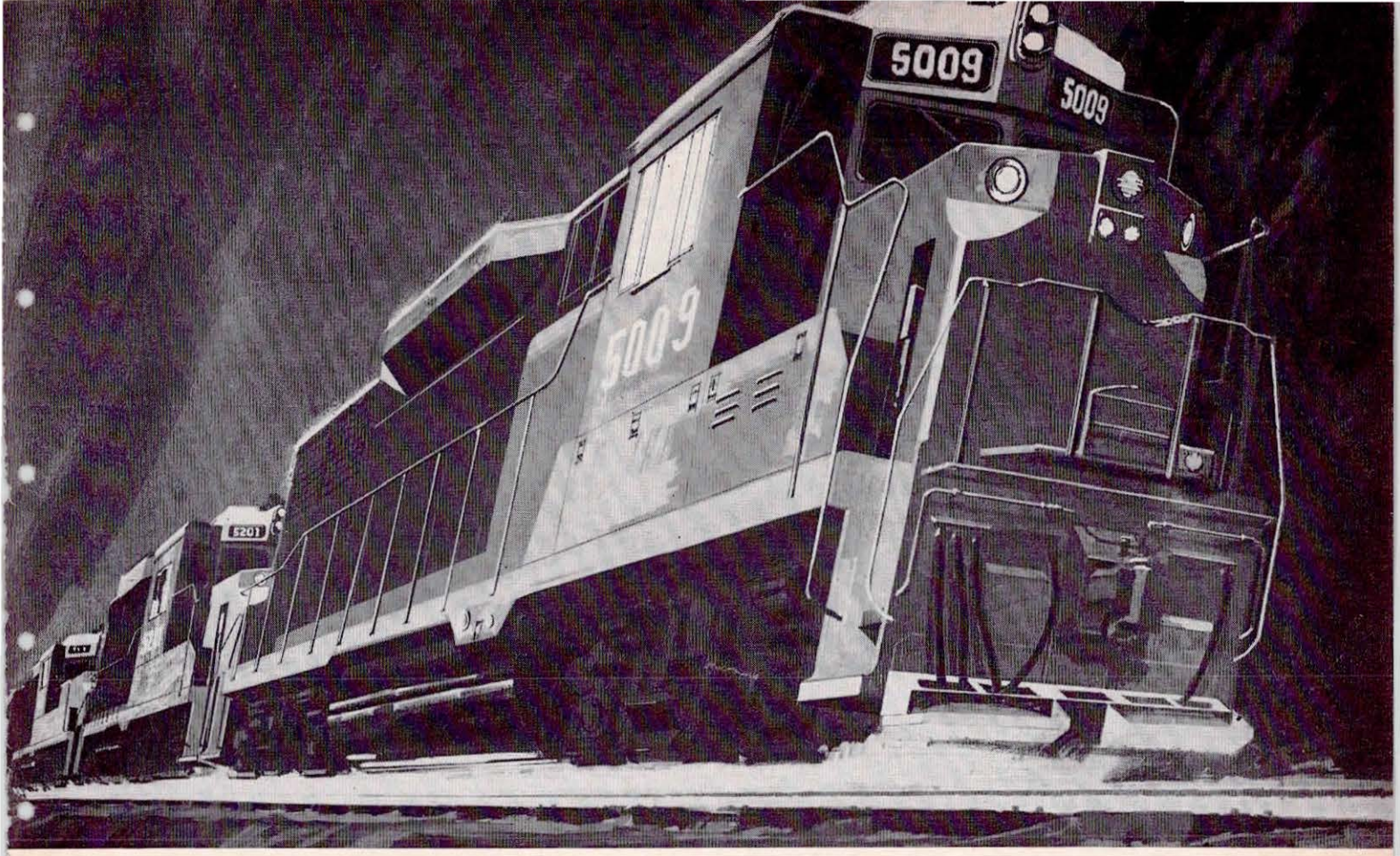
European railways—German, French, Swiss, Belgian, Austrian, Dutch, Italian (and Indian as well)—are going all out to show the world just how modern railroads really are. Equipment builders from those and other countries are cooperating in displays of ultra-modern locomotives, freight and passenger cars, track maintenance machinery, signaling equipment and all the other needs of up-to-date railway systems. Rolling stock alone—103 pieces in all—will be shown on two miles of specially built track. Other equipment will be displayed in two large and several smaller buildings. Along with the "live" exhibits will be films, models and photographs designed to demonstrate how the latest technological tools are being harnessed to make possible big developments for the railway future. Transit systems, underground railways and cable and mountain lines have their own places—as does the International Union of Railways (UIC). Still more equipment for railway use is to be shown in buildings devoted to the transport roles of the iron and steel, aluminum and chemical and plastic industries.

Railways pass the test with flying colors

It's gratifying to note the effort railways are making, because their exhibits will have to compete for attention with those of the glamour boys of transport, aeronautics and space travel, as well as with more mundane highway and pipe-line displays. On all counts "the railway effort passes the test with flying colors," say the European editors of Railway Age's affiliated International Railway Journal, who have already been privileged to preview the big show. What the European systems are doing should redound to the credit of their counterparts everywhere.

A new locomotive: 39 miles, 26 minutes

Where so much has been done, and there is so much to be seen, it may be unfair to pick out any one thing for special mention. But for railway men at least the high spot of the show is almost bound to be Germany's new high-speed electric locomotive—the 8,100-hp E 03. There will be four of them at Munich—one on stationary display and three hauling special trains from the Exposition grounds to Augsburg, 39 miles away, on 26-minute schedules. Speeds will touch 125 mph—foreshadowing regular operation, next year, of equally fast trains over several segments of the German Federal Railway system.



New Gulf process brings you a money-saving fuel!

Low sulfur content of new Gulf #2 Diesel Fuel reduces costly engine corrosion and wear.

All Gulf refineries in the United States now employ a hydrogenation process called Gulfining to further improve the quality of Gulf #2 Diesel Fuel.

Gulfining is an additional refining step which subjects regular diesel oil to a chemical reaction with hydrogen at relatively high temperature and pressure.

This extra refining step results in a reduction of sulfur content, carbon-forming compounds and other trace impurities which tend to reduce operating efficiency of diesel engines and promote engine corrosion and wear. Fuel properties such as color, pour point, and Cetane rating have all been further improved. In addition, Gulf #2 Diesel Fuel has superior storage stability.

Why not take a look at Gulf #2 Diesel Fuel, today!

Gulf

GULF OIL CORPORATION,
Department DM 20-6,
Gulf Building,
Houston, Texas 77002

Gulf makes things run better!

New equipment: Should you buy—or lease?

For many railroads, the answer is investment credit leasing—a relatively new approach to equipment acquisition. It's tailored for carriers that, for various reasons, cannot themselves take full advantage of new federal tax incentives.

Many railroads buy box cars and locomotives the same way most people buy automobiles—on the cuff—and for the same reasons. And, like people who struggle with mortgaged house, car, refrigerator and TV set, railroads often have to work through a blizzard of installment payments by making "payday" loans.

Some critics describe the elastic possibilities open to people and corporations with good credit as this country's booby-trapped door to better living. Others flippantly call it the U. S. formula for having your cake and eating it, too.

Whatever else it may be, however, credit is essential to the railroad industry. Most economists agree modern industrial society could not exist without it — and most railroad managers agree that credit and money management represent a difficult and demanding discipline. With the industry spending something like a billion dollars a year for equipment of all kinds—most of which is bought on time—and with the ground rules for credit altered radically by recent tax rules and changes, industry treasury and accounting experts are engaged in a debate as to what represents the optimum route railroads must take to squeeze the most out of every dollar they spend. The debate centers on "investment credit leasing," a new form of credit that came to the fore last year.

● **New era in rail finance.** Railroad equipment financing used to be fairly straightforward. If a carrier needed equipment and had the credit and business prospects necessary, all that needed to be done was to consult a bond yield table to see how much it would cost to finance instead of buying for cash.

Traditional financing, however, is giving way to stranger and less-well-known leasing arrangements. This is a result of new depreciable lives for cars and because of the 7% investment credit allowed by the Internal Revenue Service in 1962 as a means of loosening up enough tax-free cash to promote a substantial modernization program.

The new IRS ground rules have generated pressure behind industry modernization programs — and also stirred up the debate among railroad financial experts as to how the new rules can be most advantageously used by the carriers. Rolling stock purchases now amount to about 70% of all railroad capital expenditures, year after year, and equipment obligations of one sort or another amount to about $2.5 billion of the $10-or-so billion railroads owe. It was no wonder, then, that railroad money managers from both the accounting and treasury departments of

Gross capital expenditures of Class I railroads and issue of equipment obligations by years (millions)

Year	Capital Expenditures: Equipment	Capital Expenditures: Total	Capital Expenditures: Equipment as % of Total	Equipment Obligations Issued
1945	$ 315	$ 563	56.0%	$121
1949	981	1,312	74.8	507
1950	779	1,066	73.1	424
1951	1,051	1,414	74.3	704 (a)
1952	935	1,341	69.7	606
1953	858	1,260	68.1	410
1954	499	820	60.9	274
1955	568	908	62.6	275
1956	821	1,228	66.9	446
1957	1,008	1,395	72.3	639
1958	480	738	65.0	289
1959	568	818	69.4	309
1960	633	919	68.9	331
1961	427	646	66.1	226
1962	593	832	73.6	315
1963	785	1,043	75.3	N.A.

(a) In this and subsequent years includes those issued by receivers and bankruptcy trustees and excludes down payment on conditional sale contracts; in previous years figure reported on conditional sale contracts represents entire purchase price, rather than deferred payments.

railroads all over the country flocked to Chicago late last month to hear experts at two meetings discourse on the subtleties of the new tax environment's effect on the use of leasing for the acquisition of rolling stock.

● **New leasing plan.** At the Railway Systems & Management Association meeting May 26-27 (going on simultaneously with the AAR's Accounting Division meeting being held across the street in another hotel), top industry treasury officers heard a banker describe a relatively new approach to leasing — investment credit leasing — developed for companies not able completely, or only partially able, to take advantage of the new IRS rules.

Richard L. McAuliffe, assistant vice president of the Harris Trust and Savings Bank of Chicago, explained the pressures of the new financial environment being felt on railroads in terms of the two IRS changes:

—Assuming complete recovery of investment through depreciation charges in 14 years, "the full cost of new equipment is now made available from funds earned before taxes," he said.

—The other development of great cash value to railroads was the 7% investment credit against taxes under the 1962 Revenue Act and later revised in the Revenue Code of 1964. Railroads may subtract from their tax bills an amount equal to 7% of the cost of new equipment—if that equipment has a useful life of eight years or longer. "If one relates the potential use of the credit to a yearly outlay of $1.5 billion," noted McAuliffe, "tax savings would amount to $105 million."

● **Not all peaches and cream.** There are problems, however, in reaping the windfall if you happen to be a poor railroad or a railroad struggling along at break-even business levels. "Railroads are faced with a peculiar problem," McAuliffe told the RSMA meeting, "in that, because of the size of yearly capital expenditures, new guideline lives and accelerated depreciation rates, a low level of earnings—and the 25% of income tax liability limitation on the amount of credit available—full use of available credit may not be attainable." Railroads that do not pay taxes because of a loss position or for other reasons cannot take direct advantage of the credit. Other railroads, with low taxable income, can get only partial benefit from the investment credit.

But financial experts have found a way for such carriers to benefit from the new IRS conditions. "Within the last year there has been developed through a leasing vehicle a plan whereby a railroad can sell its unused investment credit (which it has determined it cannot use even if carried forward the maximum permissible time — five years) to another owner in return for a sharing of such investment credit by the owner leasing the equipment to the railroad at very low rentals." In effect, railroads get their equipment at a money cost of less than 3%, and the owner still gets from 6 to 9% on his money.

● **Key: measure cash flow.** Analysis of cash flow is required to determine the lease rate that will break even with —or better—the cost of debt financing, or the advantages, if any, of leasing instead of buying equipment. Relative economic desirability is analyzed by a comparison of cash payouts of tax savings "in dollars discounted to present value." McAuliffe pointed out that it is necessary to determine what dollars payable over extended periods in the future are worth today because a "dollar in hand is able to earn through investment, while a dollar in the future does not." It is to the advantage of a company to defer its outflow of payments if it can optimally invest cash at hand.

He also cited the significance of railroad depreciation methods. "They have generally written their equipment down to 10% salvage value on a double declining basis for tax purposes. Recently, however, the IRS has not required that portion of salvage value which does not exceed 10% of original cost to be deducted from the deductible base, and some railroads are now taking advantage of the new regulations and are depreciating new equipment

Age of freight cars used in interchange service in 1962

Age (Years)	Number	Percentage of Total
1 to 5	229,777	14.3%
6 to 10	237,292	14.8
11 to 15	341,723	21.3
16 to 20	188,832	11.8
21 to 25	222,670	13.9
26 to 30	61,452	3.8
over 30	324,729	20.1
	1,606,475	100.0%

Average Age 18.39 Years

Marginal lease rates under various assumptions

	Taxpaying Railroad	Non-Taxpaying Railroad
Double declining balance depreciation down to 10% salvage value:		
Constant annual debt service	2.99%	3.77%
Constant principal payments	3.27	3.80
Sum-of-the-year's-digits depreciation down to zero:		
Constant annual debt service	2.30%	3.77%
Constant principal payments	2.59	3.80

Source: R. L. McAuliffe, Harris Trust and Savings Bank.

Investment credit leasing has limitations

down to zero. Certain lessors of railroad equipment, including commercial banks, are following a similar policy."

McAuliffe used this description of how to determine optimum lease conditions under the new tax rules. "One dollar of increased expenses would cut income tax liability by 48¢. Since investment credit is limited to 25% of income tax liability, the amount of credit that could be absorbed would be decreased by 12¢—25% of 48¢. Thus, the net decrease in taxes resulting from $1 of added expense would be only 36¢. Conversely, increased revenues would be effectively taxed at only 36%, since additional credit up to 25% of the 48% tax rate could then be used."

● **'Payday' loans.** Roy H. Jones, C&O manager of investments and assistant treasurer, told the RSMA seminar how his railroad decided to use commercial paper—short term money—rather than the combination of bank loans and company cash with which C&O traditionally had financed equipment construction until the equipment could be placed under permanent long-term financing.

He cited these advantages to C&O's issuing of commercial paper:

—It costs less than the prime bank rate. Jones told the treasurers, "The present relationship among various interest rates might obscure this, but over the business or interest cycle, this has always been so."

—The ability to sell its own notes through a dealer in a national market gives a railroad a certain amount of bargaining power in dealing with its own banks.

—It helps when a railroad's bank is not able to supply all the credit needed by offering additional credit in a national market.

—More convenience in borrowing indirectly through a single commercial paper house than in establishing lines of credit with several banks in different parts of the country.

—Companies that maintain a credit position strong enough to do this acquire financial prestige and favorable prestige with investors who purchase their notes.

—A company which has thus shown its ability to obtain unsecured credit in all parts of the country is in a favorable position to raise long-term capital as it is needed.

● **C&O uses subsidiary.** Jones said C&O decided to issue commercial paper through the Chessie Corporation, a wholly owned subsidiary, with an unconditional C&O guarantee, because:

—"We wished to provide interim construction funds for both C&O and B&O programs and we felt that Section 20 (9) of the Interstate Commerce Act limiting our short-term borrowing to 5% of our outstanding securities would unduly hamper us in this regard."

—Ease of segregating the activities of Chessie Corporation. "The actual debt outstanding, its maturity and the assets being financed can be readily ascertained.

—"By using a subsidiary company, a number of legal problems relating to title to equipment and mortgage encumbrances are avoided. These are strictly legal problems—but are quite important."

● **Investment credit leasing.** Jones then turned to C&O's experience with investment credit leasing, the new technique born last year of the change in tax laws. Noting, as McAuliffe of the Harris Trust had noted, that the uneven ability of the carriers to benefit from both changed depreciable lives and the investment credit rulings of IRS had led to the development of investment credit leasing, he said that commercial banks have come to be the lessors because of traditional bank-railroad relations and because banks have ability to use a greater amount of investment credit than is normally generated from internal operations.

Lower interest charges, but . . .

Despite the substantially lower interest charges experienced by roads using investment credit leasing, Jones said, the technique may have only limited use. "In the rather limited use of investment credit leasing on the C&O, our interest equivalent charges have varied from below 3% to a high of 3.5%. When these charges are compared to 4.5% to 4.75% on conditional sales agreements, the advantages are obvious. And at the same time, our banks are enjoying a before-tax yield of 6% to 6.5% on their investment." Explaining his prediction that investment credit leasing will find only limited application, Jones described two rather substantial drawbacks to the technique.

● **Adverse effect on earnings.** He said that the technique resulted in adverse fashion on earnings—for a carrier able to use all of its investment credit—three times greater than that of a conditional sale. And, while this impact lessens as the years go by, the impact of investment credit leasing in the 15th year is still 1.5 times that of a conditional sale.

While it is true that, for book purposes, only about 50% of the original cost of equipment in depreciation charges has been used in the first 15 years when a conditional sales approach has been used, Jones asked: "Are you willing to materially decrease earnings over the next 15 years to obtain some advantages in the following years? At that, the residual problem remains to be solved."

● **Needed: a crystal ball.** For railroads not paying taxes and not expecting to pay them in the foreseeable future, Jones described a similiarly unfavorable result from the use of investment credit leasing.

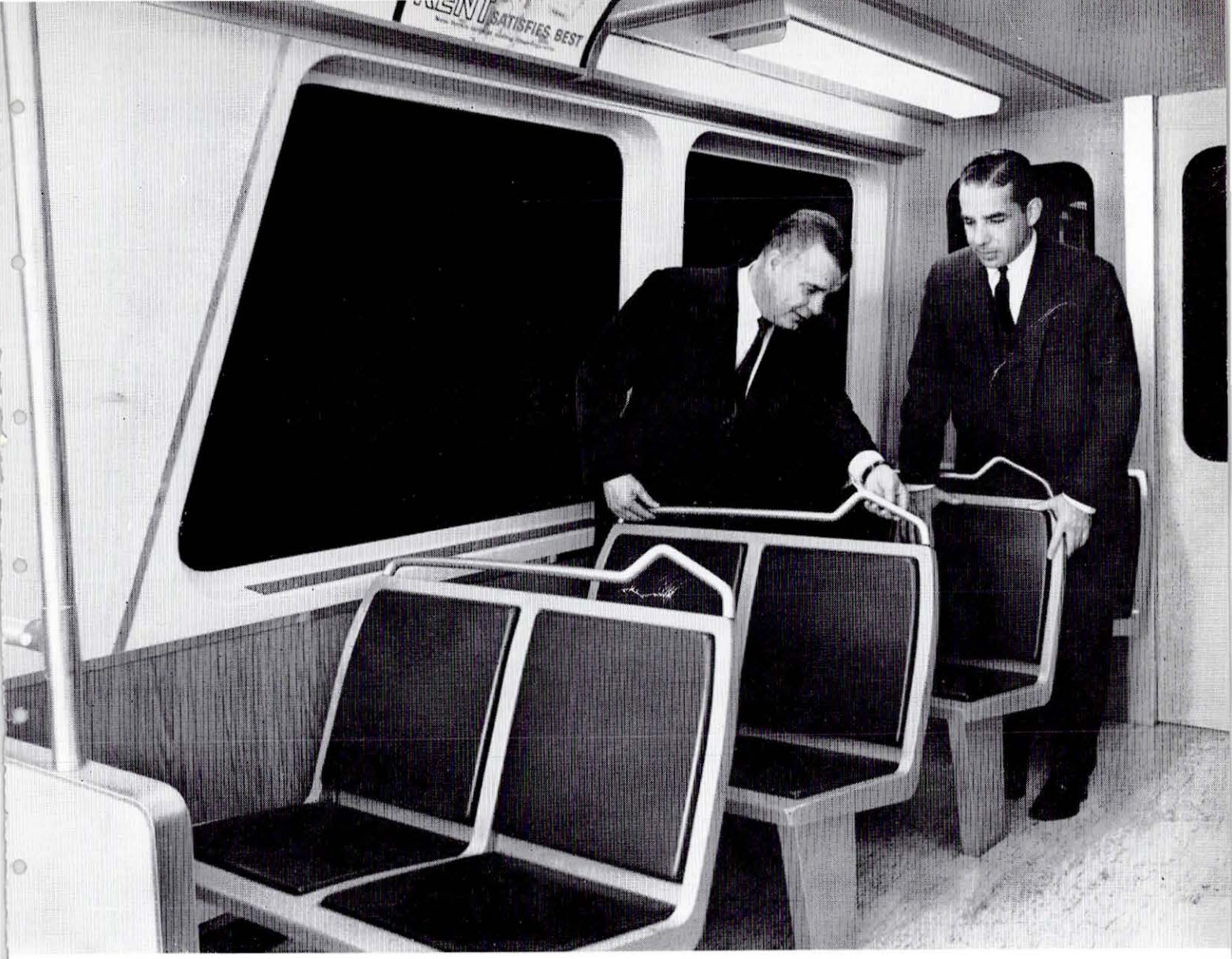
The problem of the residual value of the equipment at the end of the 15-year lease term, Jones said, is yet to be solved. "If the railroad is able under a right of first refusal to purchase the equipment for no more than 10% of its original cost, then there is no residual value problem. But who is to say what the value of equipment will be 15 years hence? If we assume only moderate inflation, a substantial part of the benefits obtained from lower interest equivalent charges may well be lost at the end of the lease term merely because the residual value may be considerably higher than 10% of its original cost."

Jones cited some efforts that have been made to get around the problem through several methods which include a partial remission of rents when the fair market value of the equipment at the end of the lease is higher than 10% of cost.

● **Trailers and locomotives?** Jones said that investment credit leasing may be just the thing for financing piggyback trailers and locomotives. "Generally, the lease terms and the amortization period for book purposes cover the same period of time. Hence, book charges under an investment credit lease are probably less than under conventional financing methods and a real advantage can be obtained. The residual value doesn't seem to be too much of a problem with respect to trailers. However, this is not necessarily true for locomotives."

A considerably less pessimistic appraisal of the possibilities in investment credit leasing was presented to the in-

(Continued on page 36)



Carl W. Sundberg, president, Sundberg-Ferar, industrial designers, and Edwin B. Meissner, Jr., president, St. Louis Car, inspect design model of new Port of New York Authority Trans-Hudson Corp. rapid transit car

Successful transit begins with design

Design that satisfies critical human needs—for safety, beauty, comfort, speed, space and economy.

Design that stimulates ridership.

Design that meets engineering requirements for mechanical equipment, for dependability.

A rapid transit car must be *designed for human use*—not merely built. Transit is a consumer product. Millions of people use it daily. Millions more are turning to rapid transit to help solve problems of mounting congestion in America's metropolitan areas.

The industrial design firm of Sundberg-Ferar, St. Louis Car's design associate, has for three decades shaped a wide range of consumer products. Now transit is one of them.

How can a transit car have passenger appeal? Ask St. Louis Car and Sundberg-Ferar. They know.

For a free copy of "The Challenge of the PATH Car," the story of designing and building these pace setting new cars, write General Steel Industries, Inc., St. Louis Car Division, 8000 Hall St., St. Louis, Mo., 63147.

GENERAL STEEL INDUSTRIES INC.
ST. LOUIS CAR DIVISION
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PIEDMONT & NORTHERN'S new line will open up thousands of acres to industrial development.

P&N's new line to greater profits

The tiny southern road has spent more than $3 million on a 24-mile-long branch, a project that looks like a good bet.

Piedmont & Northern stacks up as an imposing railroad operation. It has North Carolina and South Carolina divisions, showed a net profit of $836,842 last year—earning $9.75 per share—and recently increased the number of miles of road it operates by more than 19%.

Other U.S. railroads might justifiably envy this performance. In these days of skyrocketing operating expenses due to higher costs of materials, labor, and staggering loss & damage bills etc., the P&N, obviously, has been more than holding its own in the profit column.

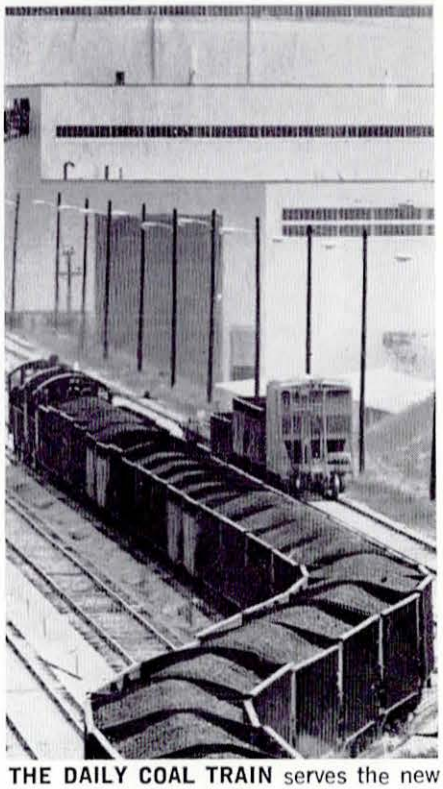
A closer look at the P&N reveals that this impressive 1964 record was racked up on a railroad only 126 miles long. When it recently increased its total mileage 19%, it meant adding a new 24-mile line.

● **The P&N builds a lucrative line.** Last week, P&N unit coal trains were making their usual runs over the newest money-making segment of the railroad's segmented network (P&N's North and South Carolina divisions don't connect), near Charlotte, N.C.

It's a 24-mile-long branch line that runs from Mount Holly to Terrell, N.C., and feeds the recently-opened Duke Power Co. generating plant on the shores of Lake Norman. Part of the route—eight miles—has been in existence for a number of years, serving another Duke plant at Riverbend.

The line to the newest Duke facility —known as Plant Marshall—cost the P&N some $2.8 million for 16.1 miles of rail. The railroad spent another $505,000 to reduce grades on parts of the older 8-mile section of line.

First P&N train over the line rolled up to Plant Marshall last January. Although the power plant didn't get into operation until March, coal stockpiling began much earlier. With the first unit of the power facility now in operation, P&N plans to eventually send in 65-car trains daily. When the second unit of the Duke plant is in operation in 1966, the generating operation will consume 5,800 tons of coal daily.



THE DAILY COAL TRAIN serves the new Duke Power Co. plant.

Building the new line involved construction of four highway bridges and one railroad bridge over Mountain Creek, the grading of 1.8 million cubic yards of earth, and the laying of 2,650 tons of 100-pound rail bought from the defunct Chicago North Shore & Milwaukee.

● **Plans for the future.** As of now, the only freight receivers on the P&N's

new Terrell Branch are the two Duke Power steam plants. But the choice acreage along the route should prove to be a natural for extensive industrial development. The area is just about 25 miles away from booming Charlotte, the power plants are there, water supply is more than adequate, and the labor pool is a large one.

"We're quite optimistic over the potential of the area," says P&N's vice president of traffic and industrial development Thomas G. Lynch. "We're already working with several promising industrial prospects."

Some 2,200 acres of land along the new P&N route have been bought up by the Great Piedmont Corp., a Charlotte land developer. Company officials says the new rail line will be a boon to development.

Hundreds more acres that can be developed for industrial or residential use are owned by Duke Power and private parties.

● **Opening up the line.** The new 24-mile branch—with it, the P&N now has 150 miles of line—is open its entire length for industrial development. Previously, the eight miles of track (owned by Duke Power Co.) could be used by P&N only for coal delivery. The railroad now leases the Duke segment of the line and can serve customers on any portion of it.

"We are convinced that the area served by our 24-mile Terrell Branch has a bright potential for growth," says P&N President Franklin Way. "There are a number of large industrial sites having as much as 500 acres or more which appear to us to be well-suited for large industries."

● **The land business.** The railroad and its wholly-owned subsidiary, P&N Realty Co., have been engaged in buying and selling land for industrial purposes for a number of years. It realized some years ago, that its growth potential lay in developing its existing service area. It bought its first proposed industrial site in the mid '30s—a 125-acre farm near Charlotte. The property is now the Thrift Road Industrial District, a booming facility with 50 railroad-served companies occupying 1.5 million square feet of buildings.

Today, the P&N has an inventory of more than 600 acres of urban industrial sites in five counties. It gets more than 20% of its revenue from more than 70 firms located on former P&N-owned land.

Improvements to the land prior to sale usually include clearing, grading, paved streets, water mains capable of supporting sprinkler systems, sanitary sewer lines, storm drains, and, of course, the all-important adjacent rail service tracks. ■

Deal near on sale of LIRR to state

Price tag is reportedly $65 million. Enabling legislation is needed for New York to buy.

Governors of both New York and Connecticut were busy last week on separate projects aimed at keeping financially troubled railroads in their respective states running.

In New York, it was reported that an agreement had been reached for the state to buy the Long Island from the Pennsylvania for $65 million.

In Connecticut, Gov. John Dempsey went to the Legislature with a multi-million dollar aid program for the bankrupt New Haven.

● **No comment in Albany.** Although no one in the New York capital would officially confirm reports of a close-at-hand sale, it was understood that a contract was being readied for submission to the legislature by Governor Nelson Rockefeller.

Under the plan, the Long Island would be operated by the newly-created Metropolitan Commuter Transportation Authority. The Authority, signed into existence by the Governor on June 1, would assume control of the Long Island after August 1966 when the road's 12-year rehabilitation program terminates. Special legislation would be required for the state to buy the Long Island.

The new authority would provide commuter transportation in New York City and six surrounding counties.

● **The Long Island price tag.** Book value of the Long Island is about $120 million. The much lower "salvage" sale price reported in the negotiations with the state is based on a number of concessions that would be made to the seller, the Pennsylvania.

The PRR reportedly would receive $500,000 a year for long-term lease of the Long Island terminal in Pennsylvania Station, use of the railroad tunnels under the East River, and air rights over freight yards in Long Island City, Queens. The PRR would also get the Long Island freight yard in Bay Ridge, Brooklyn.

The PRR currently owns some $47.6 million of Long Island stock, plus about $54 million in notes and bonds. Since 1954, when the Long Island came out of bankruptcy under a redevelopment corporation set up under state law, the PRR has received no interest on its holdings.

The Long Island, which carries about 85,000 passengers a day, last year lost $2.1 million.

● **Across the state line.** Up in Hartford, meanwhile, Gov. Dempsey was attempting to get his state's legislature to take action on a bill that would give the New Haven part of the public service taxes paid into the Connecticut treasury. The taxes come from electric, gas, telephone and water utilities, and last fiscal year amounted to $22.4 million. Tentatively, the railroad's share would be about a fifth of the taxes collected.

There was an urgency surrounding this latest proposal to aid the financially distressed New Haven. The Connecticut Legislature adjourns June 9 and will not reconvene again until 1967.

The latest financial statement from the railroad underscored the deteriorating financial position of the New Haven. Trustees reported that the carrier lost $1.2 million in April, compared with a loss of $1.1 million in the corresponding month last year. For the first four months this year, the New Haven has run up a loss of $7 million, compared with a deficit of $5.4 million in the like period in 1964.

● **What the bill would do.** Under the proposed legislation, the Connecticut Transportation Authority would be provided with capital and operating funds to meet transportation needs in the state. Specifically, the funds would be earmarked for aid to the New Haven on a continuous basis by the Authority acting alone, or in conjunction with other states.

The public service tax fund, which would be established by the bill, would be used to back up any bond issue that the Transportation Authority might request the State Bond Commissioner to authorize.

The legislation also specifies that the annual public service tax receipts be paid into the fund, and that any unused funds would revert to the general fund.

Bonds could be issued in an amount "which can be supported by the available fraction of public service taxes," and until these taxes are available each April, borrowing on them from the general fund would be authorized. ■

Telling the RR story—via ads

'64 figures emphasize that the advertising trend is up.

Railway Age's recent survey of railroad advertising [May 24, p. 18] pointed to several good and valid reasons for forecasting an increase in the industry's total ad effort. And the final figures on 1964, just now compiled, don't do a thing to throw doubt on that upturn prediction.

Briefly, here's what happened last year in the railroad ad world. Across the board, everything was up. Total advertising expenditures, measured by ICC Account 353, rose to $19,328,647, up from $18,491,019 in 1963. Both freight and passenger advertising shared in the gain. The proportion of expense charged to freight climbed by more than $495,000, to $10,454,176—and passenger advertising increased by $341,754, to $8,874,471. Every region but one—the Great Lakes Region—posted an increase in the total ad figures reported.

● **Who supports passenger ads?** Certain other comparisons in the '64 rundown may not be surprising—but they're still revealing. For instance, four roads alone—Santa Fe, Union Pacific, Great Northern and Northern Pacific—are budgeting more than half of the entire industry expenditure on passenger advertising. Four regions—New England, Central Eastern, Northwestern and Central Western—show greater passenger expense than freight. In the Great Lakes Region, freight advertising has only a slight statistical edge. But more than offsetting these fairly strong showings for passenger advertising are the Pocahontas and Southern Regions. The three Pocahontas carriers spent 10 times as much for freight as for passenger, and in the South the ratio was almost two-to-one.

Various conclusions can be drawn from the now-available '64 figures and from the Railway Age ad survey. One is that ad budgets, while they're down from levels of 10 years ago, are very likely heading up again. One element of proof is the $837,628 over-all increase last year. A second conclusion is that, even with growing budgets, ad directors are going to be more choosy in deciding where the dollars will go.

● **Where the trends are:** The survey showed a straight trend toward advertising in business and trade publications with a trend away from newspapers, consumer magazines and (with one exception) television. Cost is one factor that ad managers cite in connection with these trends—but the biggest factor may be the concentration on freight (and industrial) advertising.

Only five of the top ten advertisers last year put more money into freight than into passenger. But even among these roads, balances are shifting. And among the roads in the lower-spending group, freight advertising holds an edge.

Even now, a number of the roads making big ad efforts are heavily freight-oriented—for example, Norfolk & Western, Southern, Union Pacific, C&O, Frisco, Milwaukee, Rio Grande, Missouri Pacific, Southern Pacific. And, while there will always be a certain amount of passenger advertising—just as there will always be a certain number of crack passenger trains—the trend to freight advertising is unmistakeable and there are no indications that it's going to be reversed.

● **Dollars to produce dollars.** This, of course, is what brings the business and trade publications into prominence. More and more, ad managers are putting the limited number of dollars at their command into the media they think have the best potential for bringing dollars back into the company.

There are, though, roads which will put up a strong argument for use of such media as television even for freight advertising—on the theory that a sale isn't made by selling just the traffic manager but by selling him plus all the influences on him—which can include wife, children, neighbors, employees. This somewhat more vast audience can be reached through television, radio, newspapers, consumer magazines—and there are some roads which are still extremely strong in these ad areas.

● **Ads and problems.** And there are always budget problems. There are always problems of proving to management that advertising does actually serve a purpose. And it isn't enough to say, "Well, look, Ford is supposed to have spent more than $23 million advertising the Mustang alone—and look what a success it's been." No, that's not enough. Somebody's sure to fire back with "Yeah, and look what they spent on the Edsel—and how did it turn out?"

The main thing is, the product has to be there first—and a good number of ad men today think they're going to get a boost in the future through closer ties between marketing and research and sales promotion and advertising.

There was one such success story that seems to stand out from '64—and this is not to say there weren't others just as impressive. This one, however, took place on the Milwaukee Road—and here's the way the Milwaukee people describe it.

● **'We proved it.'** "It does pay to advertise, and we proved it beyond a doubt. Late in 1963, we lopped nearly a full day off the running time of our transcontinental freight train and inaugurated the 'XL-Special,' a train that leaves Chicago in mid-afternoon and arrives in Seattle 55½ hours later—nearly passenger-train speed. Its eastbound counterpart, the 'Thunderhawk,' also has a faster schedule than before.

"This speeded-up service represented an additional $3-million investment in operating costs to the railroad, and steps had to be taken to justify the investment. An intensive advertising campaign began in December of 1963, and in the following seven months close to 60 ads appeared in trade magazines and newspapers.

"During April 1964, the 'Red Vest' sales campaign in the Chicago area swung into operation—heralded by full-page color ads in the four leading Chicago newspapers. This campaign was designed to acquaint all Chicago shippers with our new service, and advertising was closely coordinated to attain maximum results. In addition to paid advertising, more than 5,000 Milwaukee Road employees advertised this campaign by use of car bumper stickers.

"Before, during and after the campaign, direct-mail advertising was successfully used to remind shippers of the savings in time and money afforded them . . .

"Through the efforts of our salesmen and a well-planned advertising program, our 'XL-Special'—we call it 'The Fastest Run in the West'—is a success."

● **The participation angle.** There isn't really much that could be added to such a story—except to point out that the Milwaukee did one thing that many roads talk about but relatively few seem to do much about. And that was to secure the help of those 5,000 employees, whose cars carried "Red

Vest" bumper stickers. The ad gimmick itself wasn't a costly one. But it had a certain saturation impact — and it brought the average employee into a campaign that, eventually, could have a pretty direct effect on his job and his pay check.

All of which brings us down to one final point. Last year, this reporter sounded off in print about employee communications and the need for improving the channels, both upward and downward. The upshot of this was an invitation to participate in the Railroad Public Relations Association annual meeting, on a panel on communications.

Everything went fine. But, when the discussion ended and the coffee-break began, there were certain worrisome comments. The consensus seemed to be that the remarks of the three speakers had hit the mark—but that they had been aimed at the wrong target. More than a few public relations men agreed that what had been said was right—but it should have been addressed to the operating vice president or the director of personnel or labor relations or the president himself. After all, the PR men said, they agree with the basic philosophies expressed or they wouldn't be in the business.

● **What targets?** Much the same problem probably exists with an organization like the railroad advertising managers association. Ad managers are convinced of the value of advertising or they'd be in some other line of work. The real message perhaps should be directed at traffic vice presidents or presidents, who have the final word on such things as budgets.

RPRA, however, is approaching this problem this year—this month, in fact, at its annual meeting in New Orleans. As a rather direct result of that discussion of employee communications at the '64 RPRA conference, there will be a special seminar on the subject in '65—with participation by public relations men, editors and personnel and labor-relations officers.

If the problems of the ad man follow a similar pattern, perhaps the approach to an answer can be similar, too. Perhaps, in other words, the best interests of railroad advertising might be best served by ad men and traffic men—and possibly finance officers, too—sitting down together in a conference such as an ARAM annual meeting. Everybody could come off a winner.

This article is based in part on remarks made by Railway Age Senior Editor Gus Welty at the recent 41st annual meeting of the Association of Railroad Advertising Managers in New York.

ARAM presents six awards

Six advertisers share in the 1965 awards program of the Association of Railroad Advertising Managers—with General American coming away with the top prize, ARAM's Golden Spike Award. Silver Spike plaques were awarded to Jenney Manufacturing Co., the American Oil Co. and the Port of New York Authority. Merit awards went to Green Giant and Marlboro/Philip Morris. The ARAM program, now in its 14th year, is designed to honor companies outside the railroad industry whose advertising or promotion of their own products or services contributes to a better understanding and appreciation of railroads.

With their awards, after presentation ceremonies at ARAM's annual meeting in New York are (above, left to right) John Landry, Marlboro/Philip Morris; William T. McFarlane, advertising manager of Canadian Pacific and president of ARAM; John Leahy, Jenney Manufacturing; and John M. Sheehan, manager of advertising and public relations, General American.

Other award winners (below, left to right), with McFarlane (second from left), are Robert Unrath, Port of New York Authority; Robert Emmons, American Oil; and Robert Ericson, Green Giant.

EMD's inside story: More

Electro-Motive changes all 'building blocks' in developing new line—a more powerful 645 series engine, an alternator-rectifier transmission for models of 3,000 horsepower and up, a traction motor with more capacity, and better controls. EMD's biggest engine powers the six-axle 3,600-horsepower model.

The mystery was cleared up last Thursday at Chicago. Electro-Motive does have a single engine, 3,000-hp locomotive with an alternator-rectifier transmission.

The announcement was no surprise to many in the industry who were aware that an experimental unit of this design had been on the Burlington for over two years. What did surprise the industry, however, was the fact that the General Motors Division not only has developed this model but also has an entire new line of nine higher-horsepower locomotives. They range from a 1,000-hp switcher to a two-engine 6,000-hp model. All will be available for delivery next January from EMD's production lines at its LaGrange, Ill., plant.

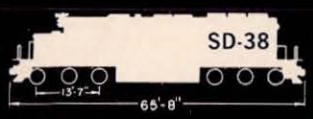
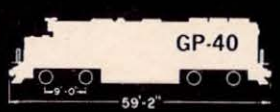
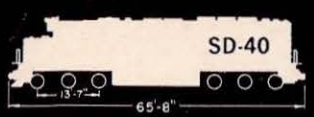
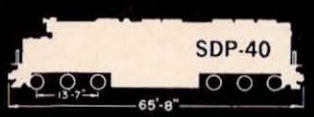
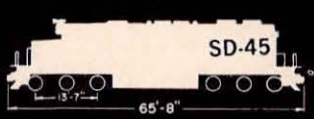
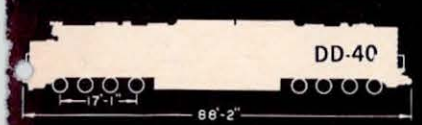
While many railroad men had knowledge of the 3,000-hp model, few expected the announcement of the single-engine, six-axle 3,600-hp SD-45. Powered by a 20-cylinder engine, the biggest ever built by Electro-Motive, this locomotive represents a new plateau in single-engine horsepower rating available from U.S. builders.

Five of the designs have the ac-dc transmissions — the 3,000-hp GP-40, SD-40 and SDP-40, the 3,600-hp SD-45 and the 6,000-hp DD-40A. These models have turbo-charged engines.

The four lower horsepower locomotives have the usual straight dc transmissions — the 1,000-hp SW-1000, 1,500-hp SW-1500, and the 2,000-hp GP-38 and SD-38. These are powered by normally-aspirated engines.

● **Electronics and horsepower team up.** The move upwards in single-engine

power in all models

Model	Horse-power	Engine Cyl-Model	Trans-mission
SW-1000	1,000	8-645 Normally Aspirated	D.C.
SW-1500	1,500	12-645 Normally Aspirated	D.C.
GP-38	2,000	16-645E Normally Aspirated	D.C.
 SD-38	2,000	16-645E Normally Aspirated	D.C.
 GP-40	3,000	16-645E3 Turbo-Charged	A.C.-D.C.
 SD-40	3,000	16-645E3 Turbo-Charged	A.C.-D.C.
 SDP-40	3,000	16-645E3 Turbo-Charged	A.C.-D.C.
 SD-45	3,600	20-645E3 Turbo-Charged	A.C.-D.C.
 DD-40	6,000	Two 16-645E3 Turbo-Charged	A.C.-D.C.

locomotives of 3,000-and-more horsepower has been made possible by the solid-state silicon rectifier. Space limitations would not permit the installation of a direct-current generator with the same capacity of EMD's new AR-10 alternator. The alternator can produce about twice the energy of a generator of equal dimensions, yet its alternating-current output had to be converted to direct current for the dc traction motors. The relatively recent development of high-power silicon rectifiers solved this conversion problem.

● **Economic aspects.** Richard L. Terrell, GM vice president and EMD general manager, said the new series is the result of EMD's longest sustained engineering effort and largest capital investment. He told those attending the announcement luncheon on June 3 at the Chicago Club that for the first time "we have elevated horsepower in every single model."

What are the unit-reducing and economic potentials of the new models? Terrell put it this way: "Four of the new '40' series units match the horsepower of five of our present GP-35 and SD-35 locomotives. On our replacement plan basis, however, where railroads are turning in 15-year-old locomotives for new models, the comparison is even more dramatic. In this case, each GP-40 will replace two 1,500-hp locomotives in high-speed freight service. Using the high-horsepower SD-45, two of these big 3,000-hp units can replace five 1,500-hp locomotives in similar high-speed operation.

"In those applications where high horsepower is of lesser importance," Terrell continued, "the normally aspirated GP and SD models offer great economy because we have been able to preserve maximum value in replacement. For example, in turning in older four- and six-axle locomotives on the purchase of these new 2,000-hp models, the main dc generator, certain long-life engine components including the Roots-type blowers, and the trucks and motor components are available for remanufacture for the new replacement units. Meanwhile, the railroad obtains a 200-hp boost over the present normally-aspirated GP-28 and SD-28 models, and a 500-hp increase over typical 15-year-old 1,500-hp locomotives turned in for replacement."

The experimental locomotive operating for the past two and a half years has been followed by 10 prototype units. Nine are six-axle SD-40 locomotives, one is a GP-40. These units have been and will continue to be utilized in service testing and demonstrations.

● **New building blocks.** Electro-Motive has developed an entire new set of components in the power-generating and power-transmission system for the new line. These components, labelled "building blocks" by B. B. Brownell, director of engineering and research, are the engine, generator, traction motor, and the control apparatus.

Brownell said "we pushed our present basic building block, the 567 engine, as far as it would go." All models will be powered by the new 645 series engine that has been under development for several years. Like the 567, the 645 engine gets its designation from the cylinder displacement, i.e. 645 cubic inches.

● **Cylinder bore increased.** Greater engine displacement results from a change in cylinder bore from 8½ to 9-1/16 inches without altering the outside cylinder dimension. Because the latter dimension is not changed, the cylinder spacing remains the same as in the 567 engine which, together with the same 10-inch stroke, permits use of

the same crankshaft. The crankcase is completely new and re-designed to accommodate the higher engine power output, yet can be used to take 567 power assemblies because the outside cylinder dimension, spacing and stroke are unchanged.

Compression ratios of the 645 series engines remain the same: 14.5 to 1 in turbo-charged engines, 16 to 1 in normally-aspirated engines. Rated speed of all engines is 900 rpm.

● **More combustion air.** Additional air needed by the larger displacement engine is supplied by a modified turbocharger. The impeller is larger, but the outer diameter of the compressor scroll is maintained. Turbine gas flow was increased by changing the turbine blade angle and nozzle area, while retaining the same turbine wheel diameter. The result is a 20% increase in air flow with no change in the outer dimensions of the turbocharger. More combustion air is also provided on the Roots-blown normally-aspirated engines by increased blower speeds and larger inlet port areas, both based on air flow and combustion studies. Swirl characteristics are improved for better fuel-air mixing.

New needle-valve fuel injectors that have seen service on the turbocharged engines will be used on normally-aspirated engines as well, with flow capacities matched to the engine model.

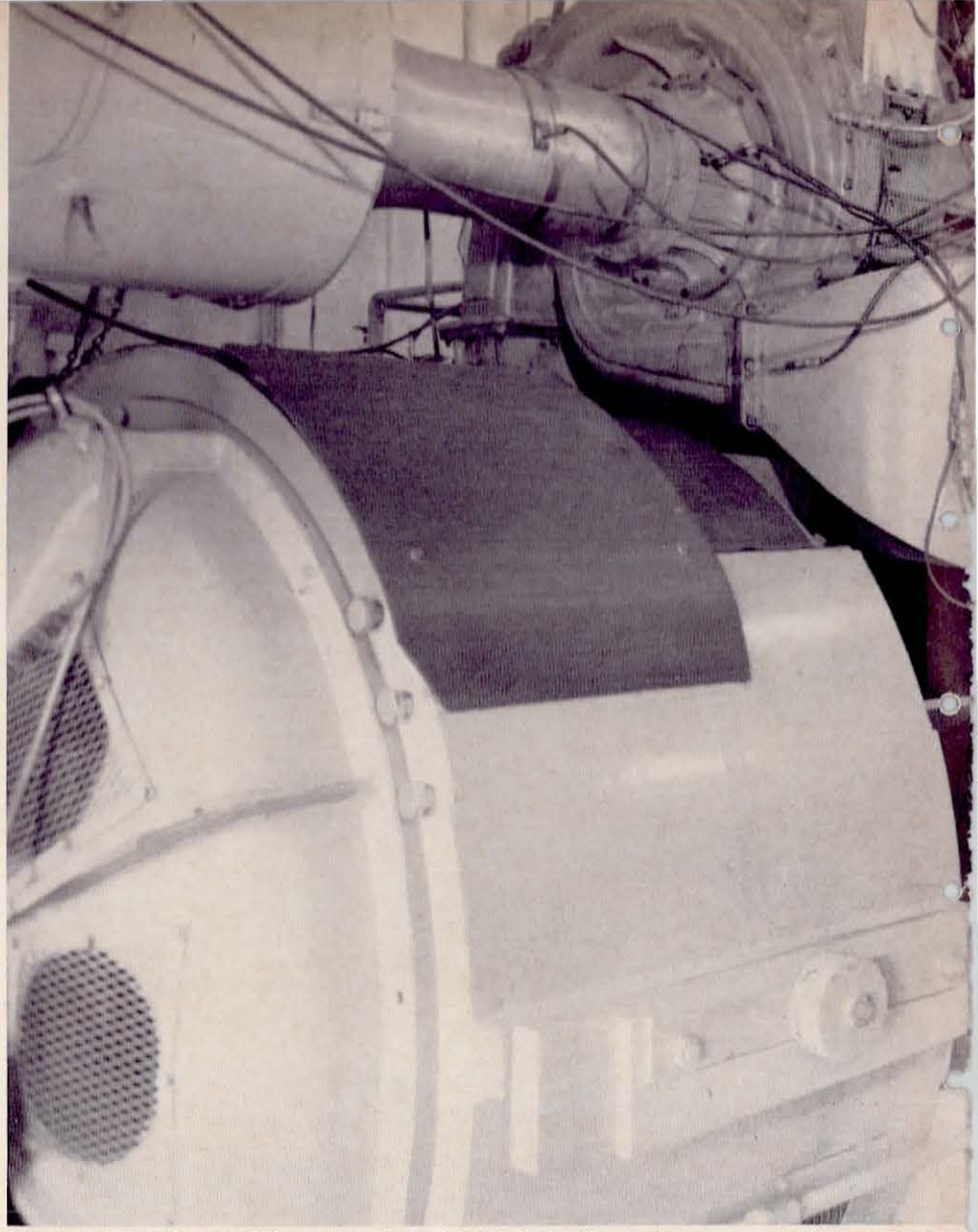
A larger water manifold handles the additional heating problems associated with the larger prime mover. Water-pump capacity has also been increased.

The lubricating oil system on the 645 is unchanged from the 567 engine. Four exhaust valves that have proved themselves on turbocharged engines will also be used in normally aspirated models. The exhaust system has been enlarged to accommodate the increase in exhaust gas flow.

● **Alternator benefits.** The AR-10 alternator is rated at 4,000-ampere capacity compared with 2,600 amperes for the D-32 generator. Benefits noted by EMD for the ac-dc system are elimination of commutators and brushes which also eliminates the generator flashover problem, elimination of basic control steps such as transition, and a reduction in motor shunting.

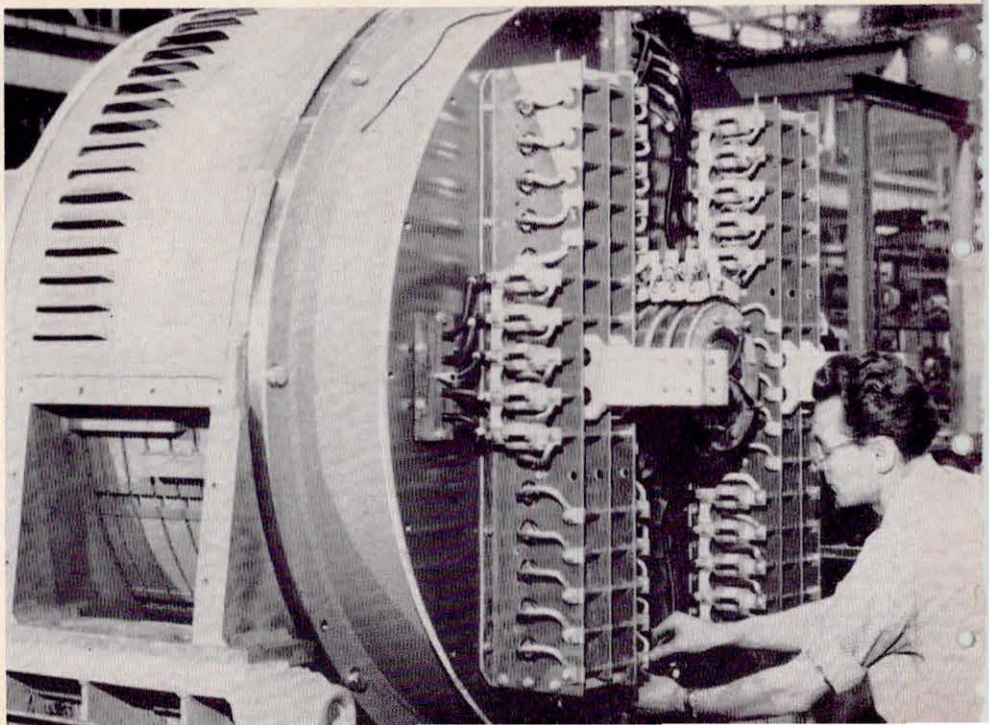
Two banks of 30 silicon rectifier diodes each are mounted on the front face of the alternator. Each diode is protected by a fuse. When the fuse blows, the diode is defective. Maintenance men can inspect the fuses visually through a glass window on the front panel. Because the 60 diodes have surplus capacity, a defective diode will not affect operation of the alternator or locomotive. It drops out of the circuit and can be quickly replaced at the next inspection.

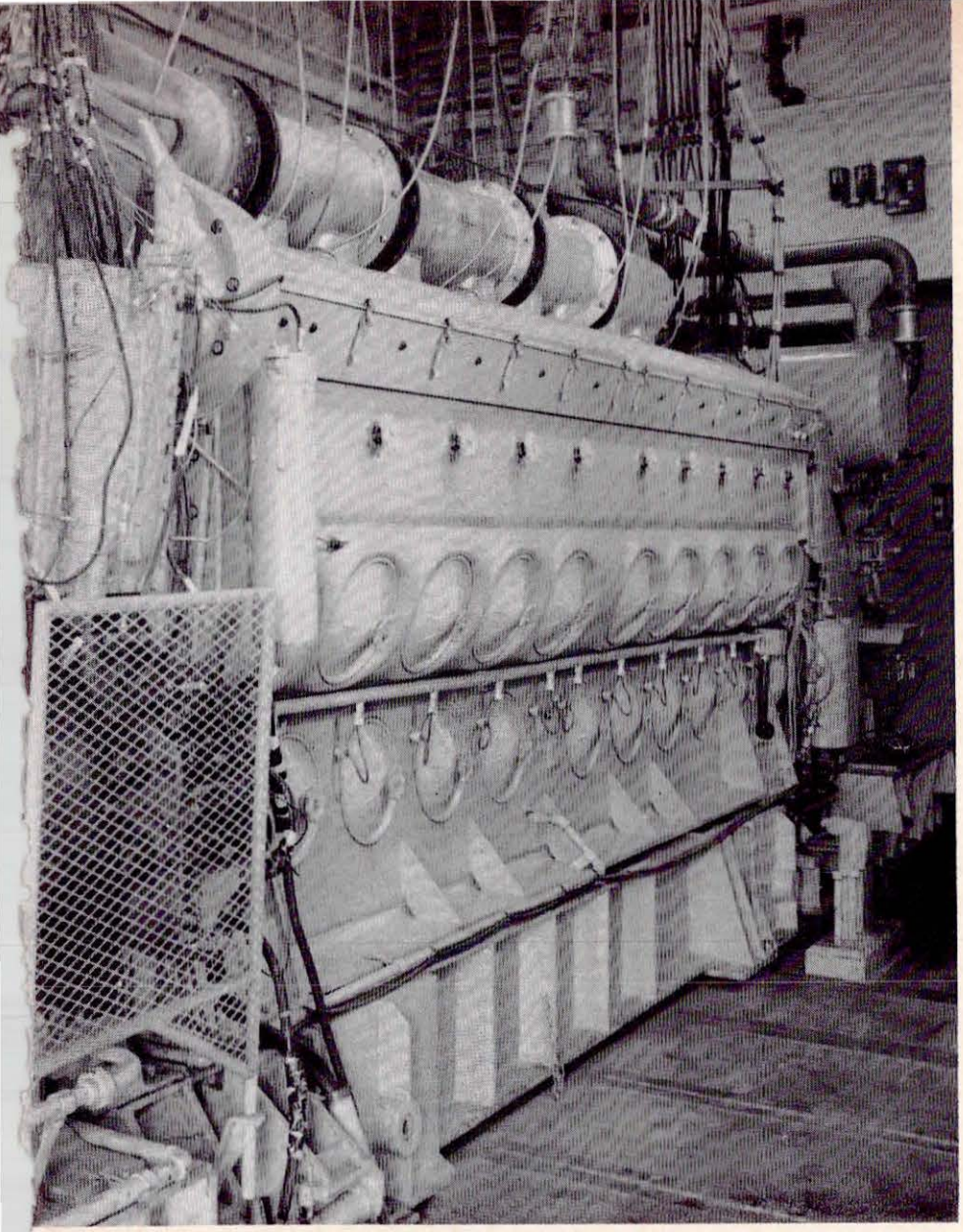
Only Class H and Class F silicone



MOST POWERFUL ENGINE ever built by EMD is this 20-cylinder engine under test. It will

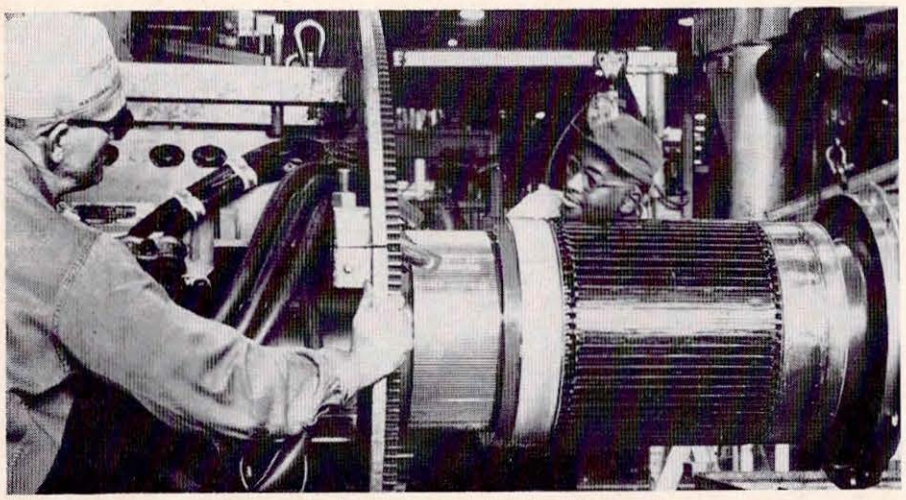
New 'building blocks' have been developed





power the six-axle, 3,600-horsepower SD-45 freight locomotive.

for power generation and transmission



INSULATION CHANGE results in cooler-running traction motor.

◄ **SILICON RECTIFIERS** at left are mounted on face of the alternator.

rubber insulation is used in the new AR-10 alternator. This type of insulation has 10 times the life span of glass or mica insulation. Both the insulation and coil design of the AR-10 have benefitted from more than 10 years of development work done by Electro-Motive in the field of diesel generating plants for public utilities.

● **Traction motor changes.** Chief improvement in the new D-77 traction motor is the use of an insulating material called Kapton. It offers higher dielectric strength, takes up less space, has higher abrasion resistance, and possesses higher mechanical strength than the mica insulation used in the predecessor D-67 motor. Dielectric strength is about 10 times that of mica. It will withstand 5,000 volts dc per mil thickness before breakdown; mica breaks down at 500 volts dc per mil.

Since Kapton can be used in extremely thin film form, it takes up less space in the traction motor. This means that 18% more copper can be used in the armature coils which results in a motor running about 20 degrees C cooler than the D-67. Kapton was developed by DuPont with application engineering by EMD engineers. Its use in the D-77 is the first application of this material in large traction motors.

As a result of continuing developments of the commutator, both in the area of processing and design, a higher level of mechanical stability is being provided in the D-77 motor. New and improved brushes are used in the new motor.

Like other components of the new EMD locomotives, the D-77 motor has been field-proven. A number of motors have been undergoing extensive road testing for the past two years. By the time the new locomotives go into production, more than 150 D-77 motors will have been given road tests in actual service.

● **Controls simplified.** A new throttle control system will produce very smooth train starting characteristics and almost instantaneous locomotive response. It will greatly improve switching ability of the EMD locomotives. Because each throttle position has a current target point, excessively high motor currents that could produce stall burns on the traction motors will be practically eliminated.

A new silicon controlled rectifier (SCR) excitation system also improves locomotive performance. It continually monitors generator output and instantaneously controls main generator excitation. Along with the new SCR system, a new load regulator rheostat will be used. The rheostat is designed to give long brush life, and will not require contact cleaning maintenance. Benefits claimed by EMD are fewer adjustments,

EMD EXECUTIVES

R. L. Terrell (right), EMD's general manager, discusses SD-40 model with V. E. Rennix, general sales manager.

greater reliability, more efficiency, and the ability to permit all excitation to be supplied from an auxiliary power source. Because the SCR excitation system provides faster response of control in both power and dynamic brake, it offers an improvement during wheel slip or wheel slide.

Power transmission control is greatly simplified, to further smooth out locomotive operation. The number of transition steps and the number of motor shunting steps have both been reduced —a change made possible through use of a higher capacity generator. This improvement, together with fewer control interlocks and power devices, reduces circuit complexity and maintenance needs.

● **Dynamic brake regulation.** A new dynamic brake regulating control system permits regulation to closer tolerances than before possible. Static, maintenance-free devices are designed for easy adjustment, extremely good reliability and long life. Static devices are also used in the overload protection system, adding to higher reliability and longer life. A new high-capacity dynamic brake control rheostat on the new locomotives withstands extreme overloads.

Control relays in a new line are smaller in size and are designed for easier wiring hookup. Special contact alloys are used and are designed to reduce mechanical friction within the relay. Other power contactors, reversers and transfer devices have undergone major design improvements.

● **Truck improvements.** New three-axle Flexicoil trucks under the SD series of locomotives will provide better load equalization than the design formerly used. A number of improvements, chiefly the use of softer journal springs, make the new truck much more tolerant of inherent rail irregularities than the truck it is replacing.

In addition to better load equalization, many parts of the SD truck are interchangeable with both GP and DD locomotive truck parts. This, together with the reduction in the number of certain parts used in the truck, will enable railroads to carry less parts inventory and enjoy lower over-all maintenance and replacement costs.

Parts that are interchangeable between 4-axle and 6-axle trucks include wheel and axle gear assemblies, journal boxes, spring seats and wheel shims; journal springs and pedestal liners. Parts that have been reduced in number include brake shoes, brake cylinders, and friction snubbers.

● **Brake system.** The conventional clasp brake-rigging system has been replaced with a new design that simplifies brake-rigging. The number of brake cylinders has been reduced from six to four, by relocating the cylinders between the wheels. Brake-cylinder plungers now work directly on the shoes instead of through complicated linkage.

Six composition brake shoes on the new truck replace the 12 iron shoes formerly used, yet braking effectiveness is not impaired. Composition shoes have shown longer wear during extensive road tests; railroads should spend less on brake-shoe replacement, as well as on over-all brake-system maintenance. Tests have also shown that wheel-rail adhesion during braking is higher when composition shoes are used. The incidence of wheel-slid flats is reduced, so that wheels last longer.

● **Friction snubbers.** Two square snubbers are used instead of the four round snubbers previously used. The two do just as effective a job as the four, so that replacement and maintenance is reduced in this area. The square design does not permit the snubber to rotate, as a result the part lasts longer. Chafing plates are now made of phenolic instead of steel, for longer wear before replacement.

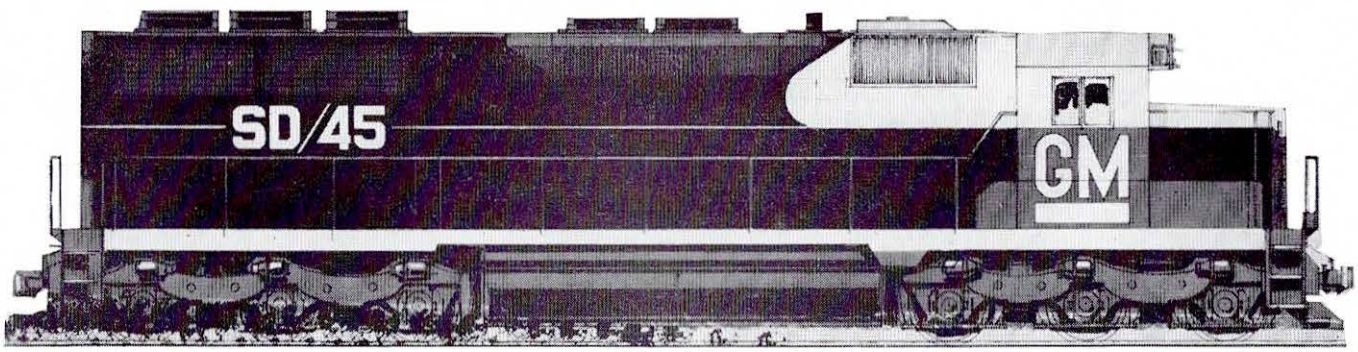
A 1,750-gallon fuel tank will be basic in the GP models; a 3,600-gallon tank is available as an option at extra cost. The SD models will have a 3,000-gallon tank with a 4,000-gallon tank available as an extra. ■

MOST POWERFUL MODEL in the new line i

EMD sets new high for

eight-axle, two-engine, 6,000-hp DD-40A locomotive with control cab for independent operation.

domestic builders in single-engine and two-engine horsepower



HIGHEST HORSEPOWER single-engine locomotive is the SD-45 with a 20-cylinder engine.

◄ **FOUR-AXLE** GP-40 (left) has 16-cylinder engine that delivers 3,000 horsepower for traction.

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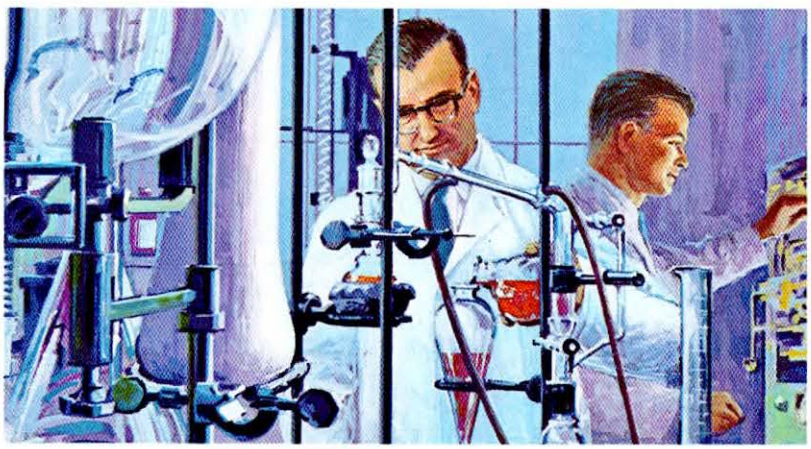

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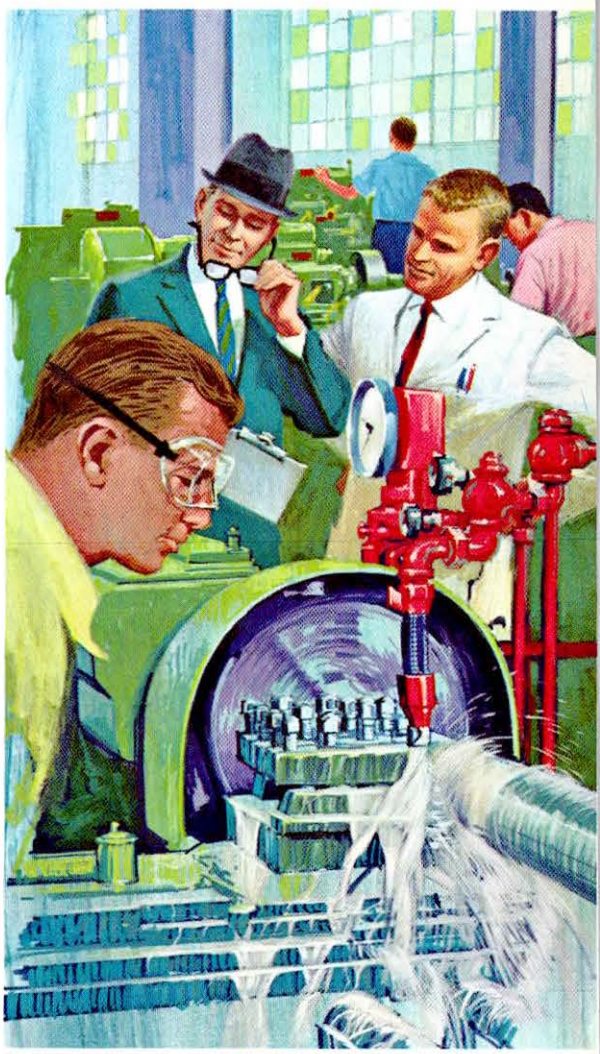

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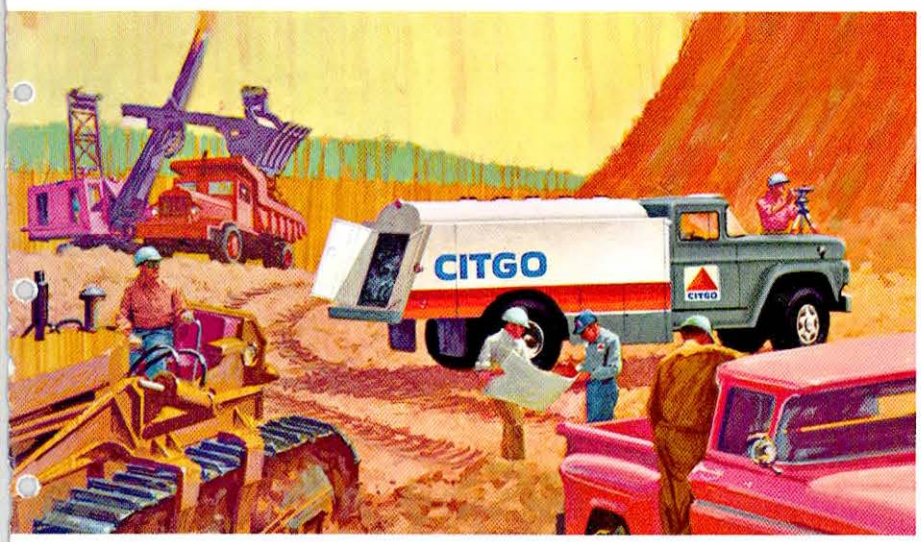

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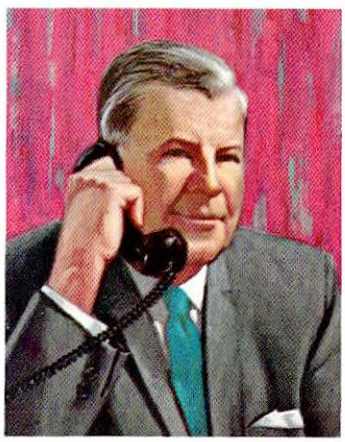

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RAILROADING AFTER HOURS WITH JIM LYNE

LYNE

RESEARCH IN DEPTH—I've just been looking over the program for the June 9-11 meeting of the Railway Systems & Management people and, as usual, am impressed with the variety and depth of the inquiries and reports this organization brings to light.

At the forthcoming meeting they are getting into equipment innovations, organization, marketing, cost and profit control, communications and the regulatory framework. The speakers are top people from railroads, finance, equipment manufacturers, shippers—all of which testifies to the increased tempo of innovation and improvement in railroading.

Dieselization showed the ability of the railroads to innovate thoroughly and quickly, when the new machines demonstrated their worth—and this alertness to desirable change has now permeated all segments of the industry. Perhaps all of us need to do more than we are doing to let the public know what's going on.

FULL-CREW RATE GAUGE?—Norman Orfall of Mesa, Ariz., has called my attention to a couple of clippings from local papers reporting that the state railroad commission is in process of ordering railroads to reduce their rates to equal the savings accruing to them from the recent abolition of the full-crew law.

Such an action would raise some interesting and important questions—the central one being: What rate of return are Arizona railroads realizing on their operations in that state? Could a regulatory body, legally or ethically, require a company to reduce its charges unless it is earning more than a "fair return"?

Take the dining-car business. Suppose some innovation would reduce expenses from (say) 150% of revenue to 125%. Can a company be long required to do business at a loss, or at less than a fair profit? Experience suggests otherwise.

Rates varying from state to state, depending on the existence (or not) of a full-crew law, would really complicate a situation that is too complex already.

WHEELS FOR BIG CARS—A friend of mine who is interested (as who isn't) in the most desirable wheel arrangements for high capacity cars (up to 200 tons or more) is inclined to favor an 8-wheel truck, e.g., two conventional 4-wheel trucks connected by a span bolster. He knows of one such experimental car and wonders whether there may be others. On a question such as this, I am strictly an amateur—having scant knowledge and no opinions. I merely pass the question along and will convey any information I receive to my inquiring friend.

'IMAGINEERING'—One of my kind friends has applied the complimentary term "imagineering" to our editorial discussion (RA, May 3, p. 50) of the fact that growing scarcity of land in urban areas favors railroads, compared with other forms of transportation.

"Imagineering" takes many forms, It gave the railroads diesel power, Big John cars, electronic yards, unit trains, multiple-car rates and scores of other innovations that have improved service and held down costs, making railroads more effectively competitive.

Railroads cannot prosper by emphasizing services that other forms of transportation can do better or more economically—but by concentrating attention on areas wherein railroads excel. And the economizing of land use in urban areas is one of the big advantages of railroad transportation which is only beginning to be realized, even by most railroaders. This characteristic of railroading deserves a lot more examination and discussion.

HIGHWAY SAFETY—I looked at the hour-long preachment on safer driving of autos that was recently televised nationally. All to the good, too. But in spite of more skillfull driving and safer design of roads, the total of highway casualties will continue to climb, so long as more and more traveling is done by auto than by safer methods.

Isn't it about time that the authorities should establish a public policy to encourage people to travel whenever possible by the safest available means (e.g., bus and rail)? As government tax policies go so far, the safest method (rail) is definitely discouraged, and more hazardous modes are promoted. As a nation, we have grown to depend upon the private automobile for most of our travel needs, but there are still plenty of situations where bus and rail could serve the purpose.

Europe leads in locomotive ownership

The world locomotive population now totals at least 186,000 units of all types, according to a recent international survey.

The actual total is probably somewhat larger. Detailed figures for the Communist Chinese Republic and a few other countries are not available. Also, figures for the USSR, as well as for industrial locomotive ownership, are based partly on estimates.

• **North America second.** On a continental basis, Europe (including Great Britain and the USSR) has the largest ownership—105,000 units, or 56% of the world's total. It is followed by North America with 36,200 units; Asia with 22,800; Central and South America, 11,300; Africa, 7,700, and Australasia, 3,600.

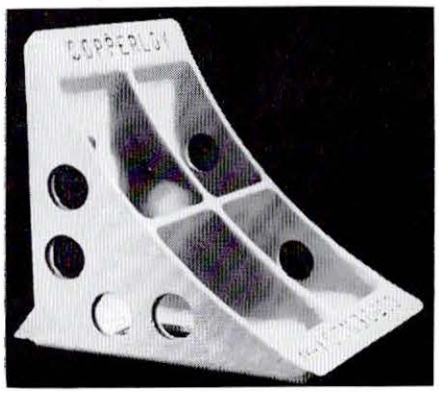
Despite the rapid expansion of dieselization and electrification, nearly 54% of the world's locomotives are still steam-driven—about 100,000 in all. Europe, again, is the largest owner in terms of number of units, but Asia operates a higher percentage of steam locomotives than any other continent.

• **Where diesel is king.** North America, on the other hand, is the stronghold of diesel power. More than 97% of all its locomotives are diesel, and they account for more than half of all the diesels in the world. Steam, in this hemisphere, has virtually disappeared.

The proportion of world railway traffic handled by diesel or electric power is far higher than the number of diesel or electric locomotives might indicate. That is partly because the figures show locomotives only. They do not include the electric or diesel multiple-unit stock which hauls millions of passengers daily in the vicinity of large cities and on secondary lines.

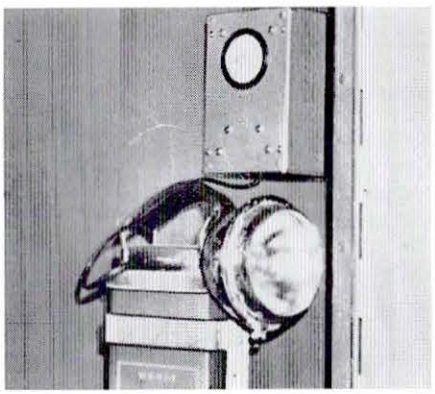
It is partly, also, because diesel and electric locomotives (except shunters) are almost invariably more powerful than the steam locomotives they may have replaced. This is well illustrated by the situation in North America. Here, the Pennsylvania has a fleet of electric locomotives nearly equal in number to all of North America's remaining steamers. Yet the electrics handle an infinitely greater volume of both goods and passenger traffic. ■

NEW PRODUCTS REPORT



Wheel Chock (RA-1)

An all-aluminum wheel chock with a self-contained reversible calk is said to hold on any surface or sloping grades, in any weather, with no change-over devices needed. In summer, or on hard surfaces, calk point is positioned up; in winter, calk point is positioned to grip on ice, snow or hard surfaces. Open top of the 11-lb chock holds any size tire. Openings on sides permit use of chains for bolting chock to dock. *Copperloy Corp.*



Portable Lighting (RA-2)

The 4-volt direct-current (LVDC) equipment used with Koehler's standard rechargeable Wheat light, Model 130-G2, gives 6 hr non-fading light per charge for a minimum of 500 complete cycles. Both light and charger can be mounted in ½ sq ft of floor space in positive- or negative-grounded vehicles. Battery drain on electrical system is negligible. A 6-volt system can be used without a voltage reducer. *Koehler Manufacturing Co.*

Portable Generators (RA-3)

The "AA" series portable generators require no switch-over or rewiring on the job for dual-voltage capacity. Two of the three models are for simultaneous 115- and 230-volt service. Both are directly connected to the engine. The EG-1.5A unit has a 1,500-watt capacity at 100% power factor and is powered by a 4-hp, 4-cycle, single-cylinder, air-cooled gasoline engine which features a stellite exhaust valve and Pulsa-Jet carburetor. It has two 15-amp, three-prong receptacles which will also accommodate standard two-prong plugs. The EG-3AA unit has a 3,000-watt rated capacity and produces 115- and 230-volt a-c with a 7¼-hp, single-cylinder, air-cooled gasoline engine. The EG-7.AA unit of 7,500-watt capacity is powered by a 16.8-hp, 2-cylinder, air-cooled gasoline engine with stellite exhaust valves and seat with rotors. The unit also offers a voltmeter, one three-pole, 50-amp, 230-volt receptacle; three 200-amp, three-pole, 230-volt twist lock receptacles, and two 15-amp polarized 115-volt receptacles. *Thor Power Tool Company.*

Roller-Bearing Grease (RA-4)

Alvania grease C, a corrosion and oxidation inhibited lithium grease, has been approved under AAR Specifications M-917-63 as a Grade B grease for journal roller bearings. The grease was formulated with special emphasis on oxidation stability and protection against rusting. It was applied initially in "captive-car" service and, after one year, has confirmed "the excellent performance predicted in laboratory bench tests." *Shell Oil Co.*

Reflector Lens (RA-5)

The lens surface of the AMT Multi-flector can be seen from any angle when light strikes any one part of the unit. The flat type Multi-flector lens, for use on trailers and automotive vehicles, has a visibility reflection of 120 deg. The cylindrical and circular beehive models, for driveways and highways, have 360-deg reflective characteristics. The lenses are made in three SAE approved colors—red, clear and amber. *AMT Corp.*

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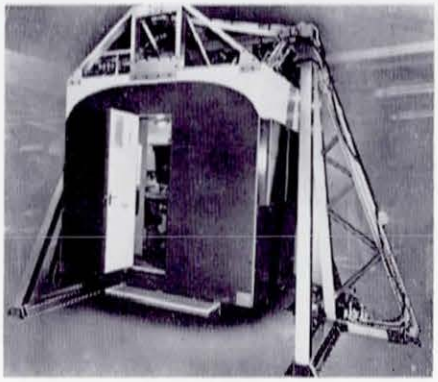
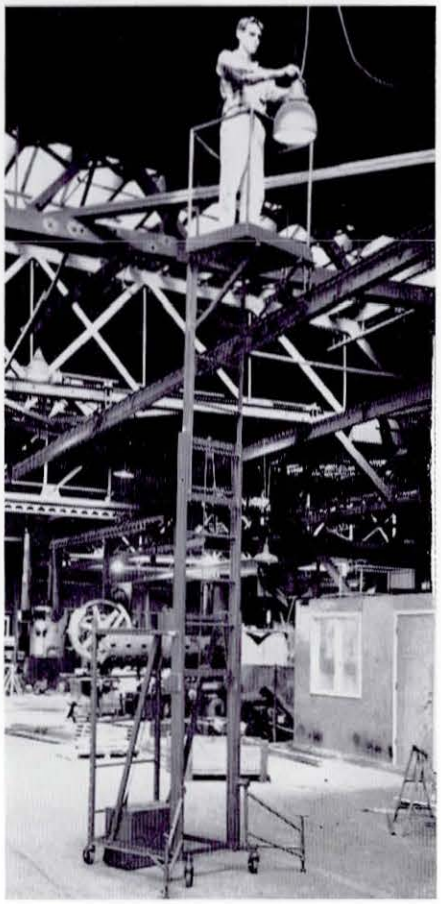


Locomotive Simulator (RA-6)

A simulator, the mock-up of a 3,500-hp electric locomotive cab equipped with fully operational devices, has been installed by British Railways at London for training enginemen. Most of the functions associated with controls in the cab are simulated electronically. Through a wide-vision windshield a projected picture of 16 miles of track unrolls at speeds up to 100 mph. From a panel on a partition behind the trainee an instructor can set up normal and abnormal operating conditions, including equipment failures, emergency operation of brakes, different train weights, and varying grades. A computer controls the simulator equipment to produce signal indications; rocking of cab as on an actual locomotive when it speeds up or slows down.

Also, an audio system reproduces the sounds of the pantograph, the closing of contactors, and the passing of wayside structures. In an 8-hr shift the simulator makes possible a full 8 hr of training, except for periodic 5-min. film rewinds. A simulator for diesel locomotives can be produced. *General Precision Inc.*



Telescoping Scaffold (RA-7)

A steel tank holding sand counterbalances the Tele-Scaf C-15. Telescoping sections adjust in increments of 3 in., providing platform heights to 15 ft—working heights to 22 ft. Sections are secured with sliding pin locks on top of base unit. Holding capacity is 300 lb. Platform is 23 in. wide, 28 in. long. Scaffold moves on 5-in. rubber casters. It may also be anchored to floor of a ½- or 1-ton pick-up truck. *Baker-Roos, Inc.*

Dual-Purpose Unit (RA-8)

A new development that allows the RMC Joint Straightener to be used on the BoltMaster has been announced. The unit is available as a new machine with both heads, or the Joint Straightener head can be applied to existing BoltMasters. The Joint Straightener uses hydraulic pressure to straighten rail ends and restore camber to joint bars by vertical cold bending. The bending is controlled accurately by electric limit switches. *Railway Maintenance Corp.*

Disposable Cup (RA-9)

A new 8-oz. disposable drinking cup is said to be so inexpensive that it costs less than the labor of washing and handling regular cups. The plastic cup is shaped like an Old Fashioned glass. It is suitable for mixed or soft drinks, milk, fruit juice and other liquids. The cup, designated MS-8, can be imprinted in up to three colors. Its extremely light weight and easy stackability make it ideal for use in large quantities. *Mutual Plastic Mold Corporation.*

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6/7/65

JOIN THE RAILWAY AGE TWO-WEEK TOUR TO EUROPE

SCHEDULE OF RAILWAY AGE TOUR

Wednesday, September 15: Leave 6:45 P.M. from JFK International Airport, New York, aboard Swissair DC-8 Jet

Thursday, September 16: Arrive in Zurich, 7:10 A.M. Leave Zurich 8:35 A.M. for 1-hour flight to Munich.

Friday, September 17 to Thursday, September 23: The entire week in Munich can be devoted to individual interests at the International Exhibition of Transport and Communications and International Permanent Way Exhibition.

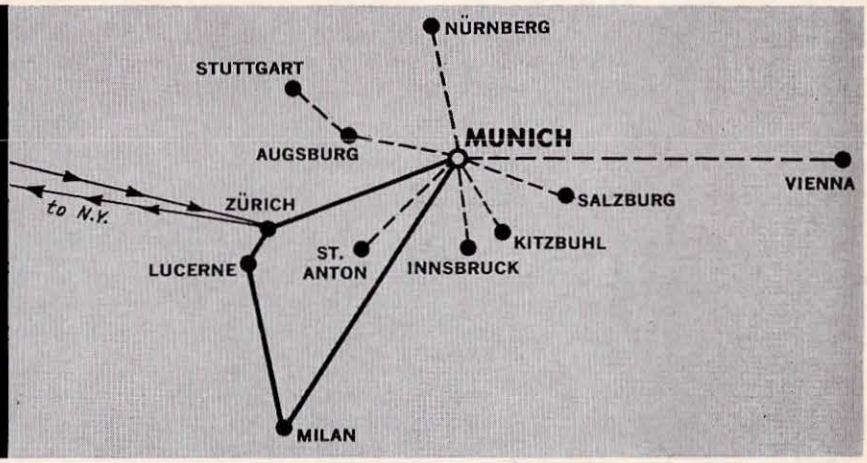
Friday, September 24: Leave 8:15 A.M. by train for Milan. Arrive early in the evening.

Saturday and Sunday, Sept. 25-26 at Milan: Tour of city's large railroad installations.

Monday, September 27: A.M. departure by train for Lucerne. Arrive early afternoon.

Tuesday, September 28: At Lucerne.

Wednesday, September 29: Leave by train for Zurich after breakfast. Leave Zurich at 1 P.M. by Swissair DC-8 Jet for a daylight return to the United States.



IN SEPTEMBER, 1965 FOR THE TWO BIG RAILROAD SHOWS IN MUNICH

Here is your opportunity as a professional railroader or railroad supply man to take a two week Air-and-Rail tour sponsored by Railway Age to visit the two big railroad shows being held in Munich this year. The summer-long First International Exhibition of Transport and Communications will feature a special week September 17-24 for professional railroaders the world over. The International Permanent Way Exhibition has been scheduled for the same week.

You couldn't ask for a more ideal occasion to meet and mingle with other railroad and railroad supply men from all parts of the world and to view the latest international railroad techniques and equipment. You will have opportunities for sightseeing, personal business and visiting.

The Railway Age tour will leave New York on September 15 from the J. F. Kennedy International Airport via Swissair DC-8 Jet. Arrive in Zurich early on September 16. Leave Zurich 8:35 A.M. for flight to Munich.

A summary of the itinerary is given in the column above. The tour program is for 14 days. The air fare, however, allows a stay up to 21 days, giving you the option of extending your stay in Europe for one week.

The Railway Age tour is being offered at cost—$632.40—covering round trip air fare, rail travel, hotel accommodations, hotel gratuities, two meals a day at hotels and dining car meals.

So plan now to come along. Mail the coupon without delay for space reservations or more complete information.

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WATCHING WASHINGTON WITH WALTER TAFT

TAFT

PRESIDENT JOHNSON'S PROPOSAL to revamp the locomotive-inspection organization has set the stage for another battle in a 10-year-old war between the ICC and unions representing railroad employees. The Presidential proposal is embodied in a reorganization plan which Mr. Johnson submitted to Congress May 27.

The plan contemplates doing administratively what the Commission has failed to get authority to do through amendments to the Locomotive Inspection Act. It would abolish the position of director of locomotive inspection and two assistant directorships, all three of which are filled by Presidential appointment with Senate confirmation. It would also set aside that requirement of the Locomotive Inspection Act which calls for 50 district locomotive inspectors. And it would transfer all functions of the abolished positions to the Commission.

THE PRESIDENT ACTED under the Reorganization Act of 1949 which provides for revamping government agencies—subject to veto by Congress. The veto is effective with adoption of a disapproving resolution by a majority of either the Senate or House.

THE LAW ALLOWS 60 days from the date on which a Presidential plan is submitted for exercise of this veto power. If the Congressional session involved is adjourned before expiration of this 60-day period, the proposal dies with the adjournment. The President, of course, can resubmit it to the next session.

THE PRIMARY PURPOSE of his plan "is to terminate outdated arrangements which now stand in the way of the most effective management of the Commission's railroad safety program," the President said. His message went on to explain that organization flexibility is now restricted by requirements of the Locomotive Inspection Act. This is in line with the Commission's position that it should be permitted to merge its inspection staffs. It visualizes an organization in which all inspectors could be trained for assignment to either safety or locomotive-inspection work, or both.

THE COMMISSION has already done as much of this realigning as it thinks the Locomotive Inspection Act permits. It has abolished the Bureau of Locomotive Inspection, merging its work into the Bureau of Safety and Service. And it has brought the district locomotive inspectors into its general regional-office organization.

ALL OF THIS has been condemned as illegal by the labor unions. The AAR has taken no position. The Brotherhood of Locomotive Engineers and Brotherhood of Locomotive Firemen & Enginemen are the unions most interested. They said last week that they will oppose the Presidential plan, seeking to have it vetoed by Congress.

THESE ENGINE-SERVICE BROTHERHOODS have always regarded the locomotive-inspection set-up as their baby. When the Locomotive Inspection Act was passed more than 50 years ago, they seem to have made a gentlemen's agreement pursuant to which their members were to rotate in the position of director of locomotive inspection.

THE FIRST DIRECTOR, J. F. Ensign, a member of BLE, was succeeded by Frank McManamy, a BLF&E member who moved up to membership on the Commission. McManamy was succeeded in the directorship by A. G. Pack, a BLE card holder. Pack's successor was John M. Hall, a BLF&E member. Then, in turn, came Edward H. Davidson (BLE), Charles H. Grossman (BLF&E), and John A. Hall (BLE), the present director.

Transit bill: $1.2 billion in 1970

Spending by states and communities should hit $18.5 billion for all types of transport.

Expenditures for rapid transit by states and communities will reach $1.2 billion by 1970, according to a report on projected public transportation spending.

The 1964 Urban Mass Transportation Act was cited as a probable "shot in the arm" that would stimulate spending for new equipment and construction work. By 1970, federal grants for mass transportation are expected to be double those presently authorized—$300 million instead of $150 million.

The estimates of future public transport expenditures are reported in a study, "Transportation Outlays of States and Cities," prepared by the Council of State Governments. It states that a total of $18.5 billion will be spent in 1970 for transportation facilities and services of all types, $6 billion more than states and communities spent in fiscal year 1963.

About 50% of the total capital transit outlays of $1.2 billion in 1970 would go for extension and rehabilitation of existing facilities, and for modernization of equipment of private rail lines.

State and local expenditures for transportation services and facilities are projected to rise at a slower rate than in the past, with the exception of expenditures for transit systems.

- **Growing transit needs.** "The amount spent on transit systems by 1970 is projected to increase more than twice as rapidly per year as the total amount spent for other transportation. Continued population growth and concentration of people in urban centers necessitate expansion both of highway facilities and of rail mass transit," the report states.
- **Basis for projections.** Amounts of current expenditures for the public

mass transit systems were projected on the basis of the estimated urban population growth in each of the states in which public transit systems are located. The assumption was that revitalization of facilities would encourage at least the same proportionate use of these facilities as was customary earlier, plus a 20% expansion in such use.

Increased costs per user due to wage increases and higher operation and maintenance costs were assumed to be offset in part by greater utilization.

● **Big spending for highways.** It's pointed out that in 1962, spending for public transit systems totaled only $90 million, while $7 billion went for highways. In 1970, expenditures for highway construction are expected to be $9.4 billion (or $10.4 billion if more funds are made available to complete the Interstate system by the scheduled 1972 date).

As in the years before, highways, in 1970, will rank second in importance among the programs of the states and communities, a ranking exceeded only by public spending for education.

Despite the large volume of road construction during the past decade, "urban transportation problems have become more serious, rather than less so," say the authors of the report, Selma J. Mushkin and Robert Harris. States and communities continue to seek solutions to problems of traffic delays, congestion, and to lack of parking in downtown areas. And, they point out, "solutions must be found if city centers are to remain viable growing areas."

● **Transit importance is stressed.** Mass transit facilities were declared to be vital within the centers of large cities. But in order to compete with the auto, transit systems will have to be revolutionized, the report states.

"In many communities a spiral of deteriorating mass transit services has set in, with lowered use, reduced revenues despite fare increases, and further curtailment of service. The 1964 Act (Urban Mass Transportation) was passed to reverse this trend.

"There seems to be little doubt that transportation requirements of rapidly expanding suburban regions will be met in the near future at least through improved highway networks and by the use of private automobiles. But within city centers, mass transit is an essential part of urban life. It has been estimated that as much as two-thirds of the working population depends on it . . . and about half of our population is dependent on some form of local public transportation."

The report states that a full-scale attack on the problem of mass transportation "requires action on a scale and of a scope beyond the range of what now appears to be politically feasible. Some major cities and metropolitan communities may within the next 5 years, however, overcome the many obstacles and introduce or greatly enlarge their public mass transportation facilities." ■

Mechanical Division to meet

The thirty-seventh annual meeting of the AAR Mechanical Division will be held in the Grand Ballroom of the Sherman House, Chicago, June 22, 23 and 24. Reports will be summarized to permit time for questions and discussion following their presentation. A Committee on Subjects, appointed by the Chairman at the opening session on Tuesday, June 22, will receive from members, and consider for discussion, special questions not included in the committee reports. The program follows.

● **Tuesday, June 22 10 a.m. (DST)** Address—David O. Mathews, president, Chicago & Eastern Illinois.

Address—R. R. Manion, vice president, Operations and Maintenance Dept., AAR.

Address—Chairman J. H. Heron, assistant vice president—equipment, New York Central.

Reports—General Committee; Nominating Committee; Locomotives and Locomotive Fuels and Lubricants; Wheels and Axles; Specifications for Materials; Electrical Equipment—Rolling Stock; Safety Appliances.

● **Wednesday, June 23 9:30 a.m.** Address—J. J. Nash, senior vice president, New York Central.

Reports—Arbitration; Prices for Labor and Materials; Journal Roller Bearings; Loading Rules; Brakes and Brake Equipment; Couplers and Draft Gears.

● **Thursday, June 24 9:30 a.m.** Address—W. M. Keller, vice president, Research Department, AAR. Subject: Center Plate Design Problems Which Cause Hard Swiveling of Trucks and Seriously Hamper Switch Operations.

Reports—Freight and Passenger Car Construction; Tank Cars; Lubrication of Cars and Locomotives.

Election of General Committee members.

Report—Resolutions Committee. ■

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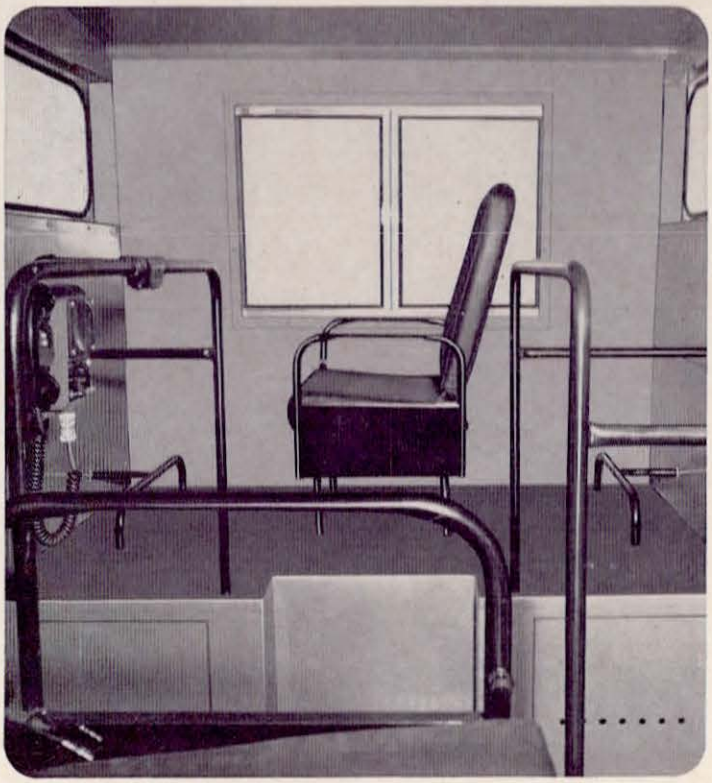

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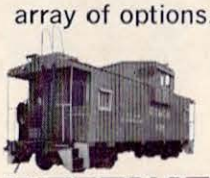

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PEOPLE

ATLANTIC COAST LINE.—**D. J. Campbell** appointed Eastern merchandise agent, New York. **J. H. Van Zant** appointed division storekeeper, Waycross, Ga., succeeding **M. C. Brinson,** who retired June 1.

BURLINGTON.—**M. R. Fitch,** district storekeeper, West Burlington, Iowa, transferred to Galesburg, Ill., to replace **W. E. Bird,** who retired Apr. 30 after more than 41 years of service. **A. M. Fitch** named to succeed M. R. Fitch.

C. T. Bradshaw named assistant to the general purchasing agent, Chicago, to succeed the late **P. E. Carlson.**

R. K. Wiley, district storekeeper, Lincoln, Neb., advanced to inspector of stores, Chicago. Mr. Wiley's successor is **E. F. Molbeck.**

CANADIAN PACIFIC.—**Keith Campbell,** manager of labor relations, Montreal, appointed vice president—personnel.

CENTRAL OF GEORGIA.—**R. E. Summerell,** general agent, Richmond, Va., appointed division freight agent, Montgomery, Ala., succeeding **James T. Parker,** who retired June 1 after more than 41 years of service. **W. E. Dorminey,** commercial agent, Birmingham, Ala., appointed district freight agent, Albany, Ga., succeeding **J. L. Bannister,** who replaces Mr. Summerell at Richmond. **M. O. Cruce,** commercial agent, Tampa, named assistant Florida freight agent, Fort Lauderdale, Fla.

CHESAPEAKE & OHIO—BALTIMORE & OHIO.—**Charles J. Henry, Jr.,** elected a vice president, C&O. Mr. Henry will continue to serve as a vice president, B&O.

Joseph W. Paul, passenger traffic manager, C&O, Richmond, Va., named passenger projects manager — operating, C&O-B&O, there. **Lemuel S. Eichner,** manager—mail, express and baggage transportation, B&O, Baltimore, named to a similar capacity on both roads. **Gilbert B. Jones** has assumed the duties of assistant manager—mail, express and baggage transportation, C&O-B&O, Richmond. He had been manager-mail, baggage and express, C&O, Richmond. **Carroll E. Romney,** manager of passenger fares, B&O, Baltimore, appointed superintendent passenger fares, C&O-B&O, Baltimore.

CHICAGO & NORTH WESTERN.—**Norman W. Pohlman,** assistant general agent-grain, Chicago, appointed general agent, Cleveland.

W. H. Burmeister named acting master mechanic, Cedar Lake, Minn., to replace **J. E. Brehm,** on leave of absence due to illness.

DENVER & RIO GRANDE WESTERN.—**Ernest J. Moore** appointed director of market research—development, Denver. Market directors appointed: **Willett S. Moore**—construction; **J. J. Schmidt**—fuels and **R. L. Taylor**—TOFC, all at Denver.

C. O. Penney named engineer of tests, Denver.

DEPARTMENT OF THE ARMY.—**Brig. Gen. M. J. Reichel** has been named Director of Transportation, Washington, D.C., succeeding **Maj. Gen. W. N. Redling,** now Commanding General, U.S. Army Transportation Center and Fort Eustis.

FRISCO.—**C. C. Roberts,** assistant auditor dis-

(Continued on page 35)

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended May 29 were not available as this issue went to press.

PIGGYBACK CARLOADINGS.—U.S. piggyback carloadings for the week ended May 22 totaled 20,644 cars, compared with 17,646 for the corresponding 1964 week. Loadings for 1965 up to May 22 totaled 397,489 cars, compared with 341,929 for the corresponding period of 1964.

IN CANADA.—Carloadings for the seven-day period ended May 14 totaled 80,079 cars, compared with 76,769 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
May 14, 1965	80,079	24,811
May 14, 1964	78,290	25,333
Cumulative Totals		
May 14, 1965	1,336,127	466,271
May 14, 1964	1,358,591	483,997

B&O unveils new 'Lumberjack' car

A new, high-capacity freight car that makes it easier to load and unload lumber was rolled out by the Baltimore & Ohio last week.

Dubbed the "Lumberjack," the 90-ton, 58½-foot car was featured at a special showing in Elkins, W. Va. The car can handle 40,000 board feet of lumber, and is equipped with chain tie-downs light enough to be handled by one man.

The road says its larger-load cars, operating under the new low-incentive lumber rates, will be able to transport lumber 200 miles or more at costs as low as two to three cents per mile per thousand board feet.

The special showing was attended by a number of representatives of the lumber industry.

FREIGHT-TRAIN CARS

► *Linde Division, Union Carbide.*—Ordered 35 75-foot tank cars from Richmond Tank Car & Manufacturing for delivery in third-quarter 1965. Cars will be equipped with FreightMaster cushioning devices.

► *Louisville & Nashville.*—Has authorized purchase of 50 100-ton-capacity gondola cars. Twenty cars will be equipped with cradles to handle coil steel, and the remainder will have bulkheads to handle plate and cut steel.

► *Norfolk & Western.*—Ordered 277 special purpose freight cars at a cost of more than $5.6 million, and 187 racks for automobile traffic, at a cost of more than $1.4 million. The new purchases include 110 60-ft cars with damage-free installations from ACF; 30 100-ton covered gondolas from Evans; 45 70-ton high-cube, 86½-ft box cars from Greenville Steel; and 92 covered hoppers from ACF.

► *Bad Order Ratio 0.5% Lower Than Last Year.*—Class I roads on May 1 owned 1,494,903 freight cars, 8,415 less than on May 1, 1964, according to AAR report summarized below. Bad Order Ratio was 0.5% lower than on May 1, 1964.

	May 1, 1965	May 1, 1964	Change
Car ownership	1,494,903	1,503,318	—8,415
Waiting repairs	85,705	93,602	—7,897
Repair ratio	5.7%	6.2%	—0.5%

NEW FACILITIES

► *Atlantic Coast Line.*—Ordered 24 sets of intermittent inductive train control equipment from General Railway Signal Co. Fourteen of the sets will be used on EMD locomotives, and 10 on GE units.

► *Canadian National.*—Will construct a new route to North Vancouver, bypassing the existing circuitous route via Burnaby, Terminal Avenue and the downtown waterfront. CN will build a tunnel in the vicinity of Boundry Road and it will extend two miles to join a new bridge to be built across the second narrows immediately east of the existing railroad bridge. The tunnel will be connected to CN rails passing through Burnaby.

► *Louisville & Nashville.*—Will expand automobile parking facilities at its Radnor Yard, Nashville, Tenn. The new, paved, lighted and fenced parking area will cover 3.20 acres.

► *New York.*—The Port Authority Trans-Hudson system will improve 11 stations at a cost of $1.9 million. The project, to be completed by the end of 1966, will include increased lighting, new seating on platforms, renovated rest rooms at six of the busiest stations, and repairs at five others. PATH is now installing a new system to supply electric power for train operations with the use of modern silicon rectifiers at a cost of $5 million.

► *Pennsylvania.*—Ordered a set of Train Multiple Unit-er (TMU) equipment from General Railway Signal Co. TMU is a locomotive-mounted, computer-electronic package. It automatically controls mid-train locomotives, requiring no communication with the lead locomotive or the wayside.

YOU OUGHT TO KNOW

Merging the mails: An advisory panel on postal rates has recommended to Postmaster General John A. Gronouski the combining of first-class and air mail into a single "priority" class. The new mail class, which would cost more than first-class mail, would move by the "fastest available transportation." The panel suggested that two rates for the priority mail might be considered, one for standard service and a higher one for requested special handling within post offices.

Lodging settlements reached: One of the biggest headaches in railroad negotiations—settlement of the "suitable lodging" dispute—is getting painful, piecemeal settlements across the country. Some reported settlements: Colorado & Southern, Green Bay & Western, Maine Central and Rock Island, with the BLE, BLF&E and the BRT; Southern Pacific's Texas and Louisiana lines, Central of Vermont, Boston & Albany and Cotton Belt, with the BRT; SP's Pacific Lines, the SP&S with the BLE and BLF&E; MoPac with the BRT and BLE; D&RGW with the BLF&E and the BRT; IC with the BLE and ORC&B; and WP with the ORC&B and the BRT. Katy, Burlington, part of the N&W, Tennessee Central, GM&O, Santa Fe, Frisco, Monon, and NP have settled with all four concerned operating unions.

New power for Jersey Central: Nine new 2,500-horsepower SD-35's went to work for the Jersey Central last week, the first new locomotives delivered to the road in 12 years. Three more locomotives will be delivered soon. The EMD units will replace 20 of the CNJ's 17- and 18-year-old 1,500-horsepower locomotives. The road expects to save $250,000 a year in maintenance costs over the first five years, and $187,500 a year for the next five years.

New coal-loading record: Norfolk & Western set a new high for the amount of coal loaded on a single ship when it dumped about 72,000 net tons aboard a super collier at Norfolk last week. The Sigtina, out of Norway on her maiden voyage, broke the previous record of 61,474 tons loaded on a ship at Norfolk five weeks ago.

April fines: Fines totaling $38,600 were paid by 27 railroads in April for violations of the Safety Appliance, Hours of Service, and Signal Inspection acts. Biggest payers, according to the ICC were: Southern Pacific, $6,000; New York Central, $4,450; Chicago & North Western, $4,000.

Record month for GATC: Helped along mightily by orders for 485 new tank cars (with a combined value of more than $10 million), General American's transportation division chalked up a record month of business in May. J. R. Scanlin, vice president of the tank-car division, said a majority of the orders were for leasing, "an increasing trend as against outright sale." General American also reported heavy demand in its freight-car division, which has produced a high level of manufacturing activity and an order backlog running into 1966.

New ARAM officers: Joseph O. Howard, manager, advertising, of the Rock Island, has been elected president of the Association of Railroad Advertising Managers. He succeeds William T. McFarlane, Canadian Pacific advertising manager. ARAM vice presidents for 1965-66 are Carl H. Mertens, general advertising manager, Union Pacific; Ralph F. Timbers, manager, advertising, Pennsylvania; and Louis H. Coffin, advertising representative, Frisco.

More money for fast trains: The federal government's three-year, high-speed ground transportation development program (RA, May 31, p. 8) is expected to cost about $90 million. The Administration has already asked for $20 million for fiscal 1966, and Secretary of Commerce John T. Connor says he will request an additional $70 million to be spent in fiscal 1967 and 1968. The proposed Washington-New York-Boston corridor project would be one of the key undertakings of the program.

Truck tonnage: Intercity truck tonnage in the week ended May 22 was 0.4% above that of the previous week, and 7.5% above the volume in the corresponding week of 1964, according to American Trucking Associations.

Current statistics

Net income	
3 mos., 1965	$121,000,000
3 mos., 1964	133,000,000
Carloadings, revenue freight	
21 wks., 1965	11,484,898
21 wks., 1964	11,196,026
Freight cars on order	
May 1, 1965	35,138
May 1, 1964	32,973
Freight cars delivered	
4 mos., 1965	25,029
4 mos., 1964	23,829
Serviceable cars	
May 1, 1965	1,409,198
May 1, 1964	1,409,716

(Continued from page 32)

bursements, named auditor disbursements, Springfield, Mo.

HANNIBAL CONNECTING.—Robert L. Ruch appointed acting superintendent, Hannibal, Mo.

ILLINOIS CENTRAL.—Vincent C. Marcus, commercial agent, Seattle, named general agent, Eugene, Ore., to succeed **G. Robert Nixon,** transferred to San Francisco.

LEHIGH VALLEY.—Gerard R. Murphy, general agent, Pittsburgh, Pa., appointed assistant freight traffic manager, Detroit, Mich., succeeding **R. M. Roth** (RA, May 31, p. 109), and is succeeded by **Wyatt Sowers.**

LOUISVILLE & NASHVILLE.—Effective June 16, **Wade Sellers,** regional traffic manager, Louisville, named Gulf Coast traffic manager, Mobile. **Coy Holaway,** traffic manager, Louisville, appointed regional traffic manager there, effective June 1.

MILWAUKEE.—Jacob Jacobson, director of revenue accounting, Chicago, appointed assistant comptroller there, succeeding **H. C. Johnson,** retired.

NEW YORK CENTRAL.—James T. Martin, superintendent, Detroit division, appointed director of organization development. His duties will include management development, training, recruitment and employment, organization planning and salary administration.

NORTHAMPTON & BATH.—Henry W. Leap, superintendent and assistant secretary, **Hannibal Connecting,** Hannibal, Mo., appointed superintendent, Northampton & Bath, Northampton, Pa.

PENNSYLVANIA.—Morton S. Smith, vice president, Pittsburgh, Pa., will retire June 30, after 36 years of railroad service.

SEABOARD.—J. R. Stephens, trainmaster, Wildwood, Fla., promoted to assistant superintendent, Mulberry, Fla., succeeding **Thomas B. Renfrow,** transferred to Americus, Ga. **W. R. Goodson,** trainmaster, Americus, named trainmaster at Andrews, S.C. **T. C. Johnson,** assistant superintendent, Andrews, retired May 31. **Hubert A. Lanier,** terminal trainmaster, Savannah, Ga., named trainmaster, Charlotte, N.C., succeeding **J. B. Durham,** who replaces Mr. Stephens at Wildwood. **F. J. Lorick,** assistant terminal trainmaster, Jacksonville, Fla., succeeds Mr. Lanier.

John T. Kelley, Jr., secretary to the president, Richmond, Va., named general trailer-on-flatcar (piggyback) agent, Lake Wales, Fla., succeeding **John L. Kreis,** named commercial agent at Jacksonville.

Carl W. Rust appointed industrial forester, Richmond. **Ernest M. Nix,** agricultural—traffic agent, Jacksonville, retired May 31 after 42 years of service.

SOUTHERN PACIFIC.—Albert L. Kohn, general advertising manager, retired after nearly 49 years of service. **Robert D. McIntyre,** assistant advertising manager for SP's 12-state system of railroad, pipelines and trucklines, at San Francisco, Calif., succeeds Mr. Kohn as advertising manager.

OBITUARY

John J. Wilson, 61, New England district coal traffic manager, **Norfolk & Western,** died May 21 at his home in Cohasset, Mass.

Supply Trade

William J. Somerville has been named assistant manager, freight car sales, **Transportation Equipment Division, Evans Products Co.,** Plymouth, Mich. He had been manager, Southeastern Region of that division.

Transgo, Inc., 210 California Street, San Francisco, has been formed to rent and lease railroad covered hopper cars, tank cars and container cars on short and long term leases. Cars owned by Transgo operate under reporting marks: TGOX. The company will provide new specialized railroad equipment to shippers and railroads. **James B. Bullock,** president, Transgo, was formerly vice president and director of Moore Associates, Inc.

On May 1, **Federal-Mogul-Bower Bearings, Inc.,** and **Sterling Aluminum Products, Inc.,** merged into **Federal-Mogul Corp. Wayne G. Slife,** international group manager, and **Robert W. Muzzy,** general manager, Federal-Mogul Division, have been elected vice presidents. **Paul Richmond,** assistant director of industrial relations, has been promoted to director of industrial relations, succeeding **Rogers I. Marquis,** named vice president—industrial relations consultant. **Warren B. Riley** has been elected vice president—corporate planning and marketing.

C. O. DeWitt has been appointed manager — market development, Eastern District, **Westinghouse Air Brake Division, Westinghouse Air Brake Co.,** New York. **Kenneth Chrissinger,** assistant manager, appointed manager—Eastern District, New York, succeeding Mr. DeWitt.

Pierre A. Droubay, vice president—operations, **Transicold Corp.,** Montebello, Calif., has been appointed president, succeeding **James L. Kelly,** resigned.

Dan L. Davies has been named technical director, Forest Products Division, **Koppers Co.,** Pittsburgh. He formerly was manager, Technical Department of that division, at Orrville, Ohio. Mr. Davies will devote most of his time to technical sales assistance to railroad and commercial markets for treated wood.

MacLean-Fogg Lock Nut Co. began construction last month of a 114,000-square-foot manufacturing plant and home office on a 12-acre site in Mundelein, Ill.

Current Publications

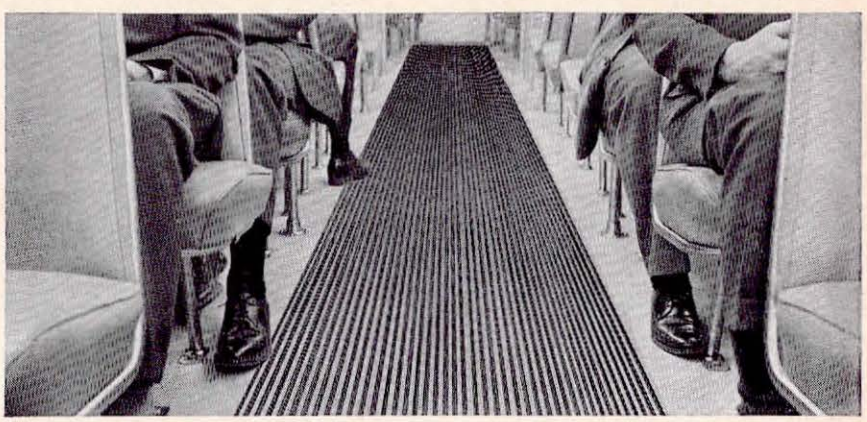
THE RAILROADS; THE NATION'S FIRST BIG BUSINESS; SOURCES AND READINGS, compiled and edited by Alfred D. Chandler, Jr. 213 pages, paper binding. Harcourt, Brace & World, Inc., 757 Third Ave., New York, 10017. $2.95.

MANAGING MARKETS FOR PROFIT. 78 pages, illustrations, charts. Railway Systems & Management Association, 163 East Walton St., Chicago, Ill. 60611. $5, flexible cover; $8.25, case binding.

THE FOUNDER'S TOUCH; The Life of Paul Galvin of Motorola, by Harry Mark Petrakis. 240 pages, illustrations. McGraw-Hill Book Company, 330 West 42nd St., New York, 10036. $4.95.

BULLETIN NO. 112. 86 pages, illustrations, drawings. The Railway & Locomotive Historical Society, Inc., Baker Library, Harvard Business School, Boston, Mass. 02163. $2 to members; $3 to non-members.

Contains an extensive article on the Pittsburgh & Lake Erie, and an interesting collection of drawings of old locomotive smoke stacks.



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New equipment: lease or purchase?

(Continued from page 12)
dustry's top accounting officers at the AAR Accounting Division annual meeting.

Walter R. Grant, New York Central vice president-finance, urged the use of sophisticated analysis via computer to determine optimum decisions in equipment financing in the new tax and business environment. He noted that NYC last month arranged its first locomotive deal on an investment credit lease "at an interest rate below 3%."

● **Aim at profits.** Investment credit leases, said Grant, have opened up a whole new storehouse of low rates to companies in certain tax positions. Such leases "permit the acquisition of large amounts of railroad equipment without down payment or drain on the company's cash position. They provide new sources of credit for equipment financing. And they provide a medium through which existing cars can be rebuilt for longer life or adapted to modern needs with no cash outlay on the part of a railroad."

Aiming each equipment decision at maximum profits is a task that needs to be pursued relentlessly, noted Grant. Chief accounting officers, having at their disposal computers to figure yields on the complicated features of investment credit leases, with knowledge of their companies' tax position at present and for the foreseeable future, and with trained mathematicians on their staffs, are in a position to help treasurers determine the best possible course to follow in equipment financing. "Also, the chief accountant, with his records of residual values of used equipment which may have to be rebuilt, is in an excellent position to make recommendations to top management as to the possibilities of rebuilding certain of the company's present equipment, incorporating it under investment credit leasing and thus modernizing the company's fleet with a minimum outlay of cash."

● **How it works.** Grant sketched out an example to the AAR meeting, illustrating how an individual railroad could benefit from adroit use of investment credit leasing to maximize a carrier's profitability.

Assume the sales department of a railroad has requested an addition to the fleet of large coal hoppers to equip unit trains they have worked out with shippers. New 70-ton hopper cars cost between $11,000 and $12,000 each.

The railroad has a large fleet of 50-ton hoppers built 14 years ago which are gradually building up a high bad-order ratio. The hoppers are also surplus to the company's needs.

With these facts in hand, the accountants and others go to work. He establishes the remaining book value of the hoppers—about $2,500 each. Working with the mechanical department he gets an estimate of what it would cost —$4,700—to convert the hoppers to 66-ton hoppers. Meanwhile, the tax experts advise him that because of loss carry-overs or because of heavy capital outlays, the railroad's chance of using all of its 7% investment credit on capital expenditures is remote.

The railroad's treasurer then enters the picture, tentatively arranging a 12-year lease of the 66-ton hoppers on the basis of selling to the lessor the 50-ton hoppers for the remaining book value of $2,500 each. The lessor agrees to rebuild them into 66-ton hoppers at $4,700 each, or a total investment by the lessor of $7,200 per car. The lessor, because he can use the 7% investment credit on the rebuilding costs of $4,700 plus accelerated depreciation, is able to offer a simple interest rate of 3% and still net a 6% interest rate for himself.

At this point, said Grant, things are ready for executive decision. "On a lot of 500 such cars, the railroad will receive a cash payment from the lessor for the old cars of $1,285,000. The railroad will incur an annual lease charge per car of $721, which is only 60% of the regular AAR per diem rate for a car of this value. With an improved cash position and the company's fleet implemented to fulfill traffic requirements at a cost 40% below the regular per diem for such cars, the executive decision is a foregone conclusion."

● **Experience skimpy.** What investment credit leasing will amount to in the years ahead is still anybody's guess. Immediately there is a good possibility that TOFC trailers, locomotives and other equipment subject to high rates of technological obsolescence will be financed with investment credit leases

But, how strong an effect it will have on the massive purchases of equipment that experts say railroads will need to buy over the next decade is, at this point, uncertain. Industry accountants and treasurers, familiar with equipment trusts and conditional sales as a route to equipment financing, are still feeling their way with this new tool in credit available to them, worrying about the subtle relationships that may build up in years to come between the fleet, costs and over-all company profitability. ■

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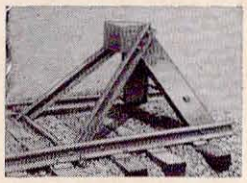

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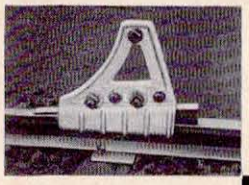

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Where to in horsepower?

As diesel ratings keep going up, thinking changes with respect to the replacement ratios. Is there a limit to unit power?

Since 1961 there has been an upward trend in repowering the nation's mainline diesel fleet with high-horsepower locomotives. Ratios have been used in figuring out how many units were required to replace the older power—ratios like "two will do the work of three." Then, new models with even greater power started rolling off the builders' production lines and ratios became meaningless unless they were specific. Two of what will replace three of what? How high is high when used to describe the horsepower rating of a diesel-electric locomotive?

The answer to the last question depends on the time that it was asked. Three years ago, new single-engine models in the 2,250- and 2,500-hp range were considered in the high-horsepower class. Then horsepower jumped to 2,750 in the Alco Century 628, and took another leap forward with the 3,000-hp Alco Century 630 ordered by the Atlantic Coast Line last December for delivery this summer.

General Motors' Electro-Motive Division equalled that new high with the announcement last week (page 18 of this issue) of the 3,000-hp "40" series, then set a higher plateau in announcing the 3,600-hp SD-45.

Even more horsepower per unit has been available since the introduction of two-engine designs in 1963 with 5,000 horsepower in GE's U50 and GM's DD-35, and 5,500 horsepower in Alco's Century 855. Again, Electro-Motive sets a new high in the domestic two-engine models with the 6,000-hp DD-40A in its new line.

So replacement ratios have been changing rapidly. Three years ago either two 2,250-hp or two 2,500-hp locomotives could do the work of three 15-year-old 1,500-hp locomotives. Now, four of these old models can be replaced by two 3,000-hp locomotives, five by two of the 3,600-hp designs. But comparisons no longer have to be made only with those old-timers; the new power can effect unit reduction when replacing even two- and three-year-old models.

The numbers game can become confusing in making comparisons. It is probably better to decide on the motive power type that best suits the operating requirements of each railroad and let the numbers take care of themselves. Horsepower is not the only important factor; tractive force can be equally so. It depends on the job to be done.

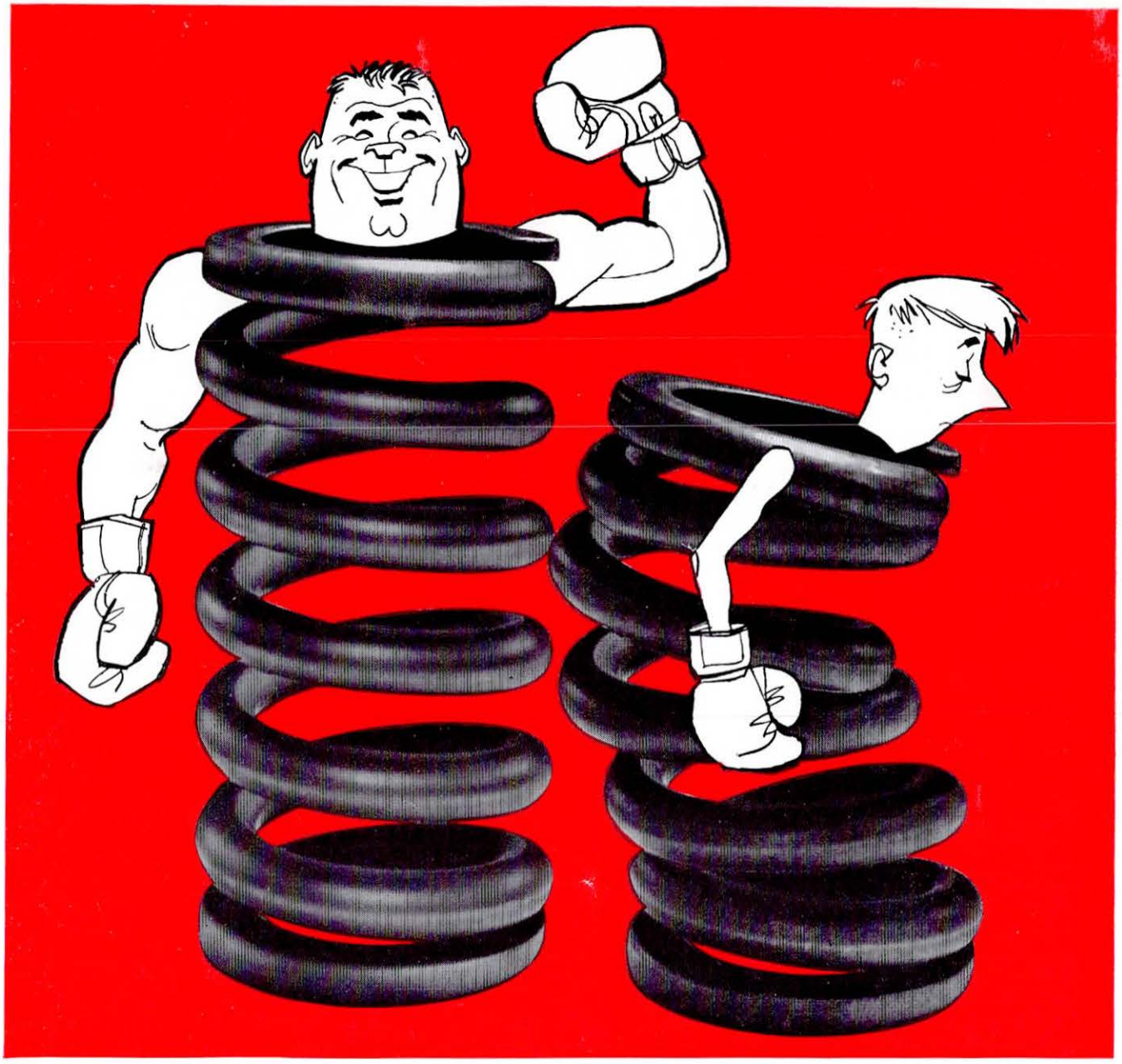
High-horsepower locomotive consists are required to move high-speed trains. It's very simple to motive-power men. For high speed and fast acceleration, a railroad must have the "horses" to do the job because horsepower is a function of speed. It is needed to move trains at 60 mph and up and to pick up speed quickly from the 30-mph curves and the slowdowns because of track work. On the other hand, tractive force, or drawbar pull and push, is what moves heavy freights up the hills and over the yard humps where speed is not the primary requirement. That depends less on horsepower and more on adhesion and traction motor ratings in the slower speed zones.

For these reasons, the builders have developed different locomotive models to meet the requirements of the service for which they are intended. For high-speed service there are four-axle designs from 2,000 to 3,000 horsepower. For tractive effort, the six-axle units from 2,000 to 3,600 horsepower can boost drawbar pull one-third for the grades and not drag their heels over flat terrain, either. The big two-engine eight-axle models can obviously do the best job in reducing the number of units required to haul heavy mainline trains. This variety of availab'e models is good because there has not been agreement among railroads as to how horsepower should be packaged. Some wanted more horsepower but liked it in the more flexible single-engine designs; others saw a need for the big two-engine models. The new models give all a choice. But in making their choice railroads may wonder whether diesel-electric horsepower ratings will again increase significantly in the next few years.

How much can you use?

Available horsepower is one thing, usable horsepower another. The latter depends on adhesion between wheel and rail. A four-axle, 3,000-hp locomotive has 750 horsepower per axle, probably the practical limit for power per axle without producing what is known as a "slippery" locomotive. The six-axle 3,600-hp design distributes only 600 horsepower to each axle, could go to 4,500 horsepower on a 750-hp per-axle basis, although even this much horsepower can probably not be utilized effectively at low speeds without excessive slipping.

It is doubtful that single-engine models can go much higher than 4,500 in horsepower without either defeating the purpose for which they are designed or adding axles to distribute the greater power. Even then, management may decide that flexibility is lost by tieing up too much horsepower in a single package.



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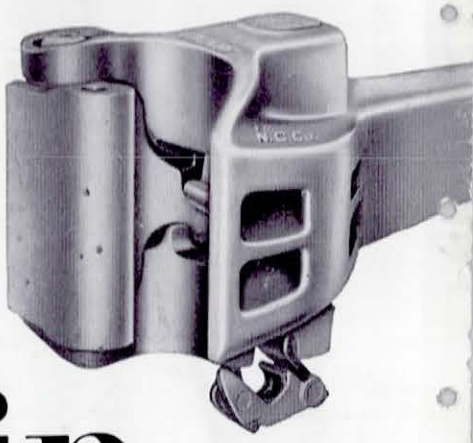

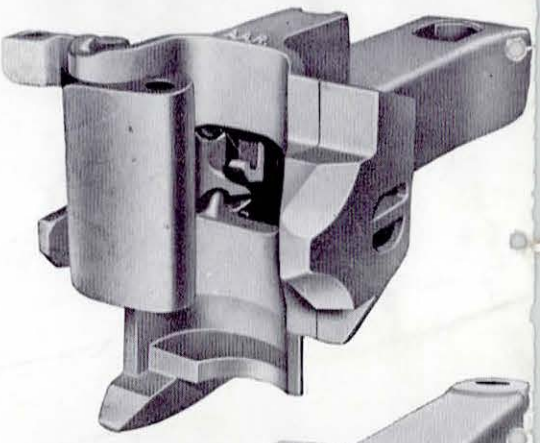

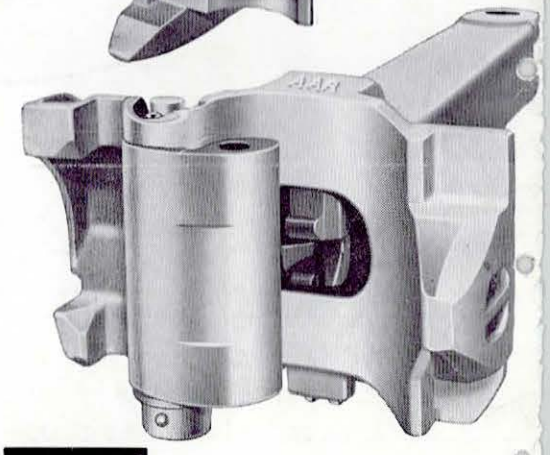

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